Essays on multichannel customer management

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Essays on Multichannel Customer Management

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Burcu'ya / to Burcu

Preface

During my PhD time in Groningen I was lucky enough to have many people around me who supported me coping with various issues concerning this dissertation. In this preface I would like to take the opportunity to mention and thank these people who supported me in different ways during my research.

First and foremost, I am deeply grateful to my supervisor Professor Peter C. Verhoef, who accepted me as his PhD student and who has always been eager to help me during my study. After five years of experience at business and marketing research, it was a challenge for me to start a new career in academia. Peter gave me so much valuable advice and always guided me to the right direction during all this time. I have learned a lot from him and without his help this dissertation would not have seen this day. Moreover, I gratefully acknowledge his extra effort and guidance to help me develop my professional career. Peter, thanks a lot for all your helps. It was a great pleasure to be your PhD student.

Prof. Scott Neslin from Tuck School of Business has been a great collaborator during my PhD and excellent coauthor in two of my research papers. He did not only provided his feedbacks on my work but he also shared his extremely valuable ideas and gave detailed arguments that helped me to improve this work tremendously. Besides I should note that he always read and responded to the drafts of each chapter of my work way more quickly than I could have hoped. Scott, thank you very much for all your helps.

I am very much grateful to Debra Trampe, who has been a colleague, coauthor and has been of great help guiding us through a new and not well-known domain for us: experimental consumer behavior. I also appreciated and enjoyed little talks with her on various topics.

Moreover, she has always been my top copy-editor in Dutch language, who has always been extremely helpful, patient and careful in her corrections when I had to come up with a research material, questionnaire, commercial report or a summary with my still yet-to-be-improved Dutch skills. Debra: *hartstikke bedankt hiervoor*.

I would like to offer my sincere gratitudes to the members of reading commitee who took their time and put effort to read my dissertation: Prof. Peter Leeflang from University of Groningen and Prof. Gerrit van Bruggen from Rotterdam School of Management. Together with Prof Scott Neslin they provided me with valuable and constructive comments which was of greap help to improve my dissertation. I hope I closely followed your suggestions.

Jelle Bouma from Customer Insights Center, has helped me a lot during this research. He was actively involved in most phases of this research to fund and get financial support for one of the projects (Project 2), to have and add a managerial perspective in our research results with his valuable feedbacks and to prepare, copy-edit and publish our research results in Dutch language. Jelle, I gratefully acknowledge your helps in my PhD project.

I want to thank to several people for their valuable comments and remarks on earlier versions of my research papers: Prof. Tammo Bijmolt, Jenny van Doorn, Marijke Leliveld, Thijs Broekhuizen and Thorsten Wiesel from University of Groningen and Prof. Luk Warlop from Catholic University of Leuven. Without their valuable comments and suggestions this work would not have taken its final form. José Luis Moraga-González and Floor Rink helped me in data collection for one project. I am indebted to all these people for their contributions.

I would also like to thank my paranymphs Stanislav Stakhovych and Onur Alper Kılıç. Stanislav has always been an excellent office-mate during four years. I really enjoyed everyday talks we made during the office hours. During this talks he also provided me valuable ideas and suggestions to improve my research. Onur has been a great friend to me at FEB whom I very

much enjoyed our chats during the coffee breaks. He has also been a good pal besides the office hours since we share a lot in common to talk about. Stanislav, Onur: thanks so much.

In September, 2009 I have started my new job at Eindhoven University of Technology (TU/e) in Innovation, Technology, Entrepreneurship and Marketing Group. This happened few days after my very last days in Groningen. A new department, a new university and a new post as an assistant professor: they brought new challenges. During my first months at TU/e, Prof. Fred Langerak and my new collegaues have been more than welcoming and helpful to me. They have made their best to make this transition process as smooth as possible. I am indebted to all of them (and particularly to Prof. Langerak) for their helps and understanding during these times.

Finally, I am forever indebted to my wife Burcu for her love, joy, understanding, endless patience and encouragement when it is most required.

Umut Konus

Den Bosch, March, 2010

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1 Introduction

1.1 General Introduction

In recent years, with the proliferation of marketing channels, research on multichannel phenomena has gained greater interest among both marketing scholars and practitioners. Recent research shows that 40% of retailers sell their products through three or more channels, and 42% sell through at least two (Direct Marketing Association, 2005). From a customer perspective, studies reveal that multichannel shoppers constitute 70% of the consumer market (Doubleclick, 2004), and they purchase 30% more than those who use only one channel (Jupiter Research, 2006). The shopping process consists of multiple phases, including information search, purchase, and after-sales services. The prominence of multiple channels indicates that many customers use different channels across the various phases of their shopping process. The research shopping phenomenon is an apt example of this tendency: 45% of customers use an online channel to gather information before they make their purchase in brick-and-mortar stores (Doubleclick, 2004). Moreover, besides business-to-customer sector, multichannel strategy has also become a major force in business-to-business distribution channels in the last years (Rosenbloom, 2007).

For the past decade, the main driver of business-to-customer multichannel shopping has been online shopping. eMarketer (2009) reports that the total purchase volume related to online shopping has increased in the past and is expected to continue rising in coming years (see Figure 1.1). Moreover Sears, one of the largest US retail chains, reports that the growth in multichannel customer activity is even outpacing the growth in online retail and there is an increasing multichannel influence on sales (see Figure 1.2). Recent research reports reveal

similar figures for European and other non-US markets (Mintel, 2009). Those developments suggest the need for a stronger understanding of multichannel customer behavior, which continues to create increasingly complex challenges for researchers and practitioners.

Figure 1.1: Estimated US Retail E-Commerce Sales (2008–2013)

Source: eMarketer, 2009.

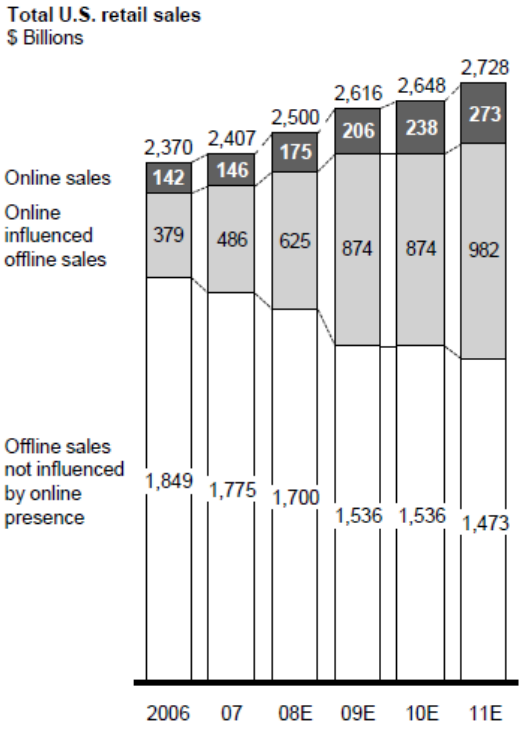


Figure 1.2: Increasing Multichannel Influence on Sales

Source: LaRose (Sears Corporation), 2009.

One of the core challenges for researchers in the multichannel domain is the understanding of customer behavior in multichannel environment. Managers need to recognize how customers choose, use, and switch among channels, as well as the impact of their choice on overall shopping patterns (Neslin et al., 2006). The Marketing Science Institute has emphasized that understanding the decision-making processes of consumers in today's digital environment is now a top-tier research priority (MSI, 2008). Neslin et al. (2006) reiterate that marketers always have considered the management of marketing channels fundamental in their marketing mix. But multichannel customer management means more than conventional channel management. Since new channels are changing customer behavior and consumers are becoming more vocal; companies are shifting from brand and product focus to customer centricity in their channel management activities (Forrester, 2008). This thesis pursues a further understanding of multichannel customer behavior and how firms can manage their multichannel marketing activities optimally.

To achieve these objectives, this thesis contains several essays. Chapter 1 provides an introduction, a brief review of extant literature, and a summary of the contributions and research questions guiding this thesis. Chapter 2 focuses on the existence of multichannel shopper segments and their covariates. Chapter 3 contributes to understanding of the consequences of forced channel migration on customer attitudes, including customer reactance, satisfaction, and future purchase intentions. In Chapter 4, I investigate the impact of channel elimination on customer behavior in terms of purchase incidence and average order size. Finally, in Chapter 5, I provide an outline of the content of each chapter and discuss the conclusions and managerial implications of this research project.

1.2 Multichannel Customer Behavior

A channel from a multi-channel perspective is "a contact point between the customer and the company" (Neslin. et al., 2006; Pieterson. et al., 2007). Multichannel customer management refers to "the design, deployment, coordination, and evaluation of channels in which firms and customers interact, with the goal of enhancing customer value through effective customer acquisition, retention, and development". (Neslin et al., 2006). With a multichannel strategy, firms provide several touchpoints that customers can use to search for information and/or purchase the products or services offered by the company. In the modern multichannel environment, the most commonly used marketing channels for purchase, information, and after-sales service are (1) brick-and-mortar stores, (2) the Internet, (3) telephone or call centers, and (4) catalogs and brochures (Neslin et al., 2006). New forms of customer touchpoints and channels, such as customer self-service channels in the form of kiosks (Reinders et al., 2008), also have been emerging, and new online media channels (e.g., eBay, Facebook, Twitter, blogs, podcasts) represent alternative pathways of interest to multichannel marketers. The use of customer-based self-service technologies (CBSST) and new media marketing also is becoming more prominent as customers gain familiarity with the technology and experience of using online services.

Previous research has made considerable progress in clarifying the various issues for multichannel customer management, though it mainly concentrates on customer channel choice (e.g., Kumar and Venkatesan 2005; Kushwaha and Shankar 2007a; Montoya-Weiss 2003), customer channel migration (e.g., Ansari, Mela, and Neslin 2007; Gensler, Dekimpe, and Skiera 2004; Knox 2005; Thomas and Sullivan 2005; Venkatesan, Kumar, and Ravishanker 2007), research shopping behavior (Verhoef, Neslin and Vroomen 2007), the multichannel allocation of marketing efforts (e.g., Kushwaha and Shankar 2007b), and the value of a multichannel versus single channel customers (e.g., Ansari, Mela, and Neslin 2007; Kushwaha and Shankar 2007a). Studies also address the impact of a multichannel

environment on customer loyalty (Wallace, Giese, and Johnson, 2004; Shankar, Smith, and Rangaswamy, 2003; Danaher, Wilson, and Davis, 2003), sales and profitability (Kumar and Venkatesan, 2005; Kushwaha and Shankar, 2007, Gensler, Leeflang, Skiera and Boehm, 2010), and channel cannibalization (Deleersnyder et al., 2002).

The main goal of this thesis is to gain a greater understanding of multichannel customer behavior and how firms can manage their multichannel marketing activities. For this thesis, I propose some research issues that require further investigation. To develop efficient and customer-oriented multichannel strategies, managers must understand these uncovered issues. Neslin and Shankar (2008) have proposed some research questions that could guide additional studies in multichannel customer management; for this thesis, I focus mainly on three: (1) How should a firm segment its customers in a multichannel environment? (2) Should customers be "right channeled," and if so, how? and (3) What channels should a firm employ? Those issues constitute the basis for this thesis and correspond to the way in which customers behave in multichannel environments and respond to different firm strategies.

1.3 Contributions and Research Questions

This research focuses on three substantial issues that require further research attention: (1) multichannel shopper segments and their covariates, (2) customer responses to forced channel migration, and (3) the effect of channel elimination on customer behavior. Table 1.1 shows the main characteristics of the studies in this thesis.

Table 1.1

Main Research Characteristics

	Chapter 2	Chapter 3	Chapter 4
Subject	Multichannel shopper segments and their covariates	Customer responses to forced channel migration	Effect of channel elimination on customer behavior
Data	Survey data	Survey data	Actual (transactional) data
Sample Size	364	Experiment 1= 117 Experiment 2= 129 Experiment 3= 499	Analysis= 1000 Validation= 1000
Methodology	Latent class analysis	Experimentation	Tobit Type II model

In the following sections, I briefly discuss the theoretical background, relevancy, and contributions of the three research studies to marketing literature.

1.3.1 Multichannel Shopper Segments and their Covariates

Neslin et al. (2006) identify multichannel customer segmentation as a key issue in designing effective multichannel strategies. At one extreme, customers might behave homogeneously with respect to available channels, in which case the multichannel strategy is essentially mass marketing. At the other extreme, specific segments might align with specific channels, such that the market contains a store segment, a catalog segment, and an Internet segment, for example. Previous research identifies a multichannel customer segment (Kumar and Venkatesan, 2005; Kushwaha and Shankar 2006), mostly focusing on customer purchases from multiple channels. However, information search and purchase represent two critical and often separate stages of the shopping process, for which consumers may use different channels (Verhoef et al. 2007). Thus, the main research question for Chapter 2 is:

Research Question 1: Do multichannel shopper segments exist? If so, what are the covariates of multichannel segment membership?

To contribute to existing literature, this study thoroughly investigates the existence of multichannel shopper segments, with consideration of both the information search and purchase phases of the shopping process. It also investigates the psychographic and sociodemographic covariates of a multichannel orientation, in line with prior retailing research (Ailawadi et al. 2001). By examining multichannel shopping behavior for multiple product categories, this study determines some potential differences in segmentation schemes and their covariates.

1.3.2 Customer Responses to Forced Channel Migration

In the past decade, many customers have migrated from traditional to alternative channels, though existing research has focused mainly on voluntary channel migrations (Thomas and Sullivan, 2004; Kushwaha and Shankar, 2006; Gensler, Leeflang, Skiera and Boehm, 2010; Ansari, Mela and Nesin, 2008). In this form, customers have the freedom to choose among multiple channels without any restrictions. Yet a newer form of customer migration reflects firm strategies that are coercive in nature and eliminate certain channels or discourage customers from using particular channels. These tactics imply that customers' freedom to choose a channel has been threatened or eliminated, which could lead to customer reactance, dissatisfaction, or lowered usage intentions. Therefore, the main research question for Chapter 3 is:

Research Question 2: What is the impact of forced channel migration on customer reactance, satisfaction, and future channel preferences? How can firms mitigate the potential negative consequences of a forced channel migration strategy?

This research makes several contributions to the literature. First, this study is the first to study the effect of forced channel migration on customer attitudes such as customer reactance, satisfaction, and compliance. Second, Chapter 3 investigates the effect of incentives to encourage mitigation on the negative consequences of a forced migration strategy with regard to customer attitudes. In this sense, the study includes both rewards and punishments as mitigation tools. Third, I examine if the response of customers to forced migration strategy varies across customer groups (i.e., high and low value customers).

1.3.3. Effect of Channel Elimination on Customer Behavior

Various studies address the introduction of new channels and their effects on customer behavior (Deleersnyder et al., 2002; Van Nierop, Leeflang, Teerling, and Huizingh, 2009, Boehm and Gensler, 2006; Ansari et al., 2008). However, eliminating nonprofitable marketing channels is also part of today's business practices. Empirical studies have shown that forced channel migration leads to negative customer attitudes (Konuş, Trampe, and Verhoef, 2009; Reinders et al., 2008) but do not indicate the impact of channel eliminations on actual customer behavior. Therefore, Chapter 4 aims to examine the consequences of channel elimination on customer behavior, with particular reference to the catalog retailing industry, according to the following research question:

> Research Question 3: How does the elimination of a catalog channel influence customer purchasing behavior? Which factors affect customers' responses to a channel elimination?

This study makes several contributions to existing literature; primarily, it is the first study to investigate the effect of eliminating a channel on actual customer behavior. This investigation considers various factors such as past customer behavior, channel use

demographics, e-mail communications, and time trends, which may influence customer responses to the channel elimination. Finally, the research contributes substantial knowledge on catalog retailing and multichannel marketing, because it investigates the role of the print catalog channel as an information source and a potential impetus for the shopping process.

2 Multichannel Shopper Segments and Their Covariates[1,2]

2.1 Introduction

The recent proliferation of channels creates extensive challenges for researchers and practitioners alike. These challenges in turn prompt studies in the field of multichannel consumer management – "the design, deployment, coordination, and evaluation of channels through which firms and consumers interact, with the goal of enhancing customer value through effective customer acquisition, retention, and development" (Neslin et al., 2006). One of the core challenges in this field is understanding consumer behavior in a multichannel environment (Neslin et al., 2006).

Neslin et al. (2006) identify multichannel consumer segmentation as a key consumer behavior issue for designing effective multichannel strategies. Whether, and if so how, consumers' channel usage can serve as a basis for segmentation has crucial implications for firms. At one extreme, consumers might behave homogeneously, using all channels for the same reasons. In this case a multichannel strategy is essentially mass marketing. At the other extreme, specific segments might align with specific channels. In this case, marketers must understand the characteristics or covariates of these segments to determine how to design and target their channels. For example, if there is an "Internet segment" that enjoys shopping and

[1] This research has been financially supported and executed in close cooperation with VODW Marketing Consultants Leusden and Market Response. The authors thank two anonymous reviewers, the editors of the Journal of Retailing and Jenny van Doorn for their helpful comments on previous versions of this paper.
[2] A modified version of this chapter is published in: Konus Umut, Peter C. Verhoef, and Scott A. Neslin (2008), "Multi-Channel Shopper Segments and Their Covariates," Journal of Retailing, 84 (4), 398-413

is highly price conscious, the firm will want to communicate price clearly on the Internet, use Internet promotions, and add features to its website that make shopping more enjoyable, Indeed, this approach views multi channel segmentation as a device for serving the current customer base or to reach new customers (Neslin and Shankar, 2008). Complicating any effort to derive multichannel customer segmentation schemes, customers use channels for various phases of their decision process, such as information search as well as product purchase (Neslin et al. 2006; Balasubramanian et al. 2005). For example, Verhoef et al., 2007) show that consumers' search channel preferences need not be the same as their purchase channel purchases.

Finally, consumer usage of various channels, and therefore how consumers are segmented with respect to multichannel usage, is apt to vary greatly by category (Bhatnagar and Ghose, 2004b). For example, book purchases may predominantly involve a single channel, whereas shopping for consumer electronics may engage the customer in several channels, including the Interent, catalogs, as well as the retail store.

The above suggests that multichannel customer segmentation provides a managerially relevant way to segment the market, but to be successful, must: (1) identify demographic and psychographic covariates for characterizing the segments, (2) acknowledge that consumers use channels for multiple phases of their decision process, and (3) incorporate the possibility that multichannel customer segmentation differs according to product category.

Table 2.1 summarizes relevant research, showing whether each study investigated segmentation, and if so, whether it investigated covariates, multiple phases of the decision process, and multiple categories. This research shows there is a multichannel segment that employs multiple channels for either search or purchase (Kumar and Venkatesan, 2005) and these multichannel consumers represent an increasingly large proportion of consumers (Rangaswamy and van Bruggen, 2005; Verhoef et al., 2007). Multichannel shoppers also tend

to transact in higher volumes (Neslin et al., 2006; Blattberg et al., 2008), though this finding, as well others related to the covariates of multichannel shopping (Balasubramanian et al., 2005; Kumar and Venkatesan, 2005; Kushwaha and Shankar, 2008; Schoenbachler and Gordon, 2002), centers on consumer purchasing rather than information search.

While the studies listed in Table 2.1 have contributed significantly to our understanding of channel choice, we see that no study investigates customer multichannel segmentation, incorporating demographic and psychographic covariates, multiple decision phases, and multiple categories. For example, there are few studies that segmented customers on the basis of their multichannel behavior; these attempts are limited to customer's *purchasing* behavior across multiple channels. Furthermore, Table 2.1 suggests there is no research so far that considers psychographics as potential covariates of multi-channel behavior. Nonetheless, previous research has shown that there is a strong relationship between consumer behavior and psychographic variables (Ailawadi et al., 2001).

In summary, we have identified the need for research that develops a segmentation scheme that incorporates covariates, multiple phases, and multiple categories, and found that existing literature does not meet this need. Accordingly, the main objectives of our research are as follows:Segment consumers on the basis of their channel orientation in the information search and purchase phases of their shopping process;

1. Investigate the relationship between psychographic/demographic customer characteristics and segment membership; and
2. Explore how multichannel segment membership might differ across different product categories.

Table 2.1
Prior Research Overview

			Covariates*					
	Multichannel Setting	**Empirical/ Theoretical**	**Segmentation**	**Socio-Demographic**	**Psychographic**	**Other**	**Multiple Phases**	**Multiple Categories**
Schoenbachler and Gordon (2002)	Multichannel behavior	Conceptual	-	√	-	√	-	-
Nunes and Cespedes (2003)	Multichannel strategy	Conceptual	√	-	-	-	√	-
Keen et al. (2004)	Channel choice	Empirical	√	-	-	√	-	-
Bhatnagar and Ghose (2004a)	E-shoppers	Empirical	√	√	-	√	-	√
Knox (2005)	Channel choice	Empirical	√	-	-	√	-	-
Kumar and Venkatesan (2005)	Multichannel behavior	Empirical	-	-	-	√	-	-
Balasubramanian et al. (2005)	Channel choice	Conceptual	-	-	-	√	-	-
Verhoef et al. (2007)	Research shopping	Empirical	-	-	-	√	√	√
Kushwaha and Shankar (2007)	Multichannel strategy	Empirical	√	-	-	√	-	-
Venkatesan et al. (2007b)	Multichannel behavior	Empirical	-	√	-	√	-	-
Kushwaha and Shankar (2008)	Multichannel behavior	Empirical	-	√	-	√	-	√
This Paper	Multichannel behavior	Empirical	√	√	√	-	√	√

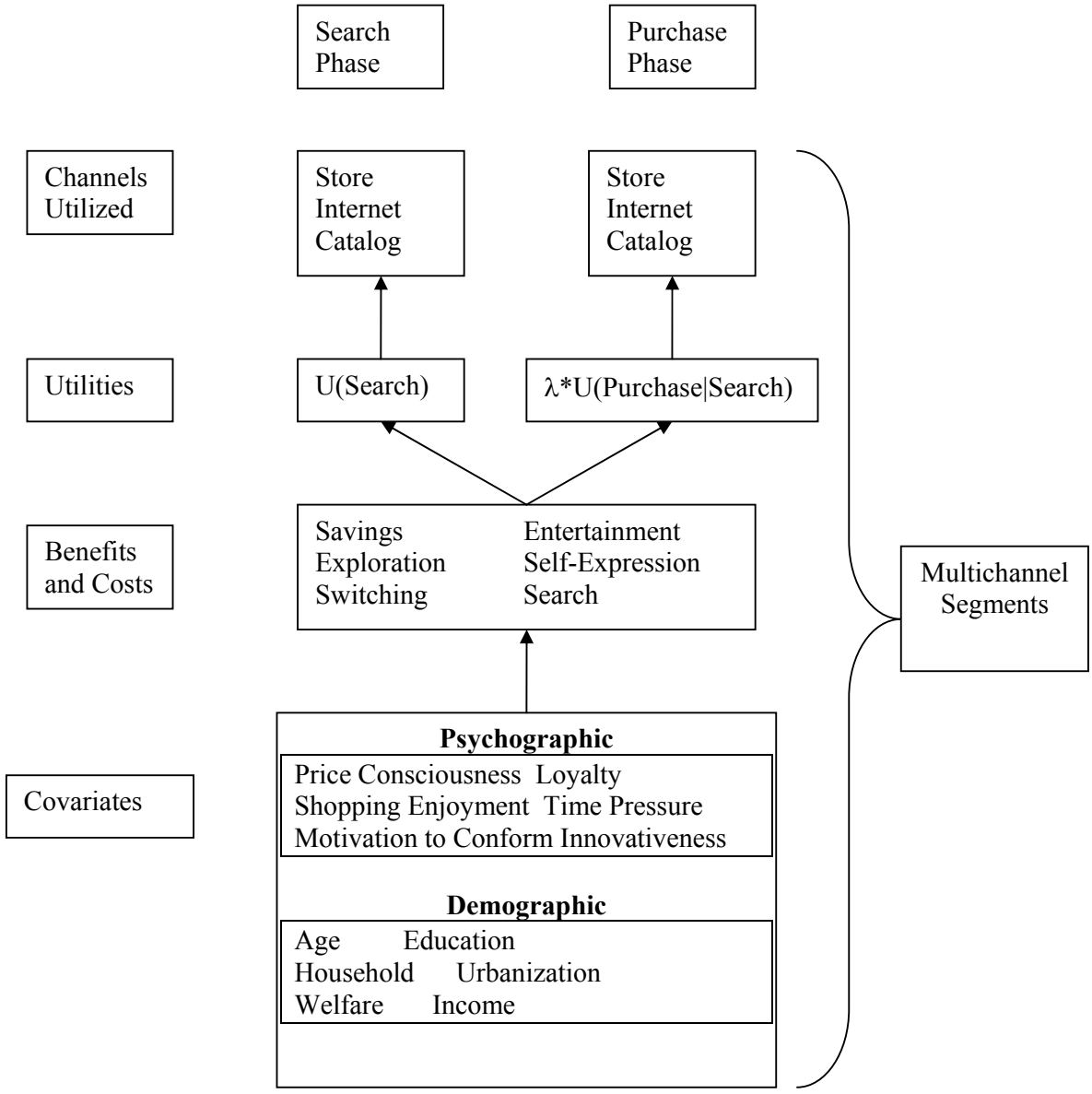
* Other covariates include covariates such as; benefits sought, relational, behavioral, conditional covariates and channel attributes.

In pursuing these objectives, we make several contributions to the marketing literature. First, our research is the first to investigate the existence of multichannel shopper segments incorporating multiple phases of the consumer decision process—especially search and purchase. We exclude post-purchase since we aim to examine multiple categories and channels comparatively. The usage of post-purchase services appears to be rare in some of the chosen channels and categories for which we could obtain data. We therefore do not include after-sales channel behavior in our segmentation, but we would submit that simply moving from a predominant emphasis on purchase in the literature to purchase and information search is a significant contribution. Second, we propose a framework for motivating the existence of segments and suggest variables that might be included in segmentation efforts. This framework relies on dynamic structural modeling literature, which is becoming more popular in marketing (Chintagunta et al., 2005). Third, we incorporate psychographic and sociodemographic factors (Ailawadi et al., 2001) and though prior research considers some covariates (Kumar and Vanketesan, 2005; Kushwaha and Shankar, 2008; Venkatesan et al., 2007b), findings pertaining to psychographics and sociodemographics remain scarce. Fourth, we examine multichannel behavior in multiple categories, in contrast with most research that addresses a single product category and often uses company-specific data (e.g., Kumar and Vanketesan, 2005; cf. Kuswaha and Shankar, 2006). Considering the above mentioned contributions, we build on previous research, add new knowledge to literature and fill an important research gap in multichannel customer management. Furthermore, our research has important managerial implications since the existence of consumer segments which are based on consumers' multichannel orientations would lead firms to different strategies in multichannel customer management.

To achieve these research goals, this article proceeds as follows: First, we present our conceptual model with our rationales based on consumer perceived utility and multi-phase shopping process. Second, we discuss multichannel segmentation and its covariates in a conceptual framework. Third, we detail our sampling and methodology and elaborate on the potential variables to include in the structural framework of consumer utility, which we employ as the main theoretical underpinning of potential covariates of multichannel behavior. Fourth, after we present our model and discuss our empirical results, we end with conclusions, managerial implications, limitations, and issues for further research.

2.2 Conceptual Model

In Figure 2.1, we present the conceptual framework for our study. Using channels for either search or purchase depends on the utility the consumer derives from searching on or purchasing from the multiple channels. These utilities therefore depend on the benefits and costs of search and purchase, which in turn relate to psychographic and demographic factors. We assume the customer decides on a set of channels for both search and purchase. In our model we consider customer decision making as a forward-looking process in which customers make initial decisions by considering the impact those decisions will have on the utility they might gain from future decisions. Multichannel decision making for both search and purchase coincides nicely with this point of view. That is, customers decide which channels to search, anticipating the utility they will gain when they purchase. To maximize their utility, customers must assess several costs and benefits, as we show in Figure 2.1. These assessments in turn may be colored by the customer's psychographic or demographic profile.



*The discount factor λ ($0 < \lambda < 1$) reflects the extent to which the customer is forward looking.

Figure 2.1: Conceptual Framework of the Model

The framework in Figure 2.1 is helpful for two reasons: First, it provides the motivation that explains why we expect multichannel segments. For example, a price-

conscious customer perceives a real benefit from searching on several channels, which will pay off when the time comes to purchase. In contrast, a non–price-conscious customer recognizes little benefit to searching. Such customer differences in psychographic and demographic variables should elicit different benefits and costs from searching and purchasing, different utilities, and different channel preferences. Second, the framework provides the basis for formulating expectations about how demographics and psychographics might relate to multichannel preferences. For example, time-pressured customers exhibit low λ values, because they lack the time to consider future benefits. To maximize their utility, they take the simple way, probably single-channel search and purchase.

In implementing this framework, we must resolve (1) which channels to study, (2) which benefits and costs to consider, and (3) which psychographic and demographic features to address. First, we consider bricks-and-mortar stores, Internet, and catalog channels for two main reasons: They are available to consumers for both search and purchase, and they are available in every product category that we include in our research, namely, mortgage, insurance, computers, home electronics, clothing, holidays, and books. These categories differ in terms of their complexity, purchase frequency, and tangibility (Peterson et al., 1997).

Second, we include savings, exploration, brand/channel switching, entertainment, self-expression, and search as benefits and costs relevant to our study, mostly drawn from Ailawadi et al. (2001), who draw from Chandon et al. (2000) and Bawa and Shoemaker (1987), among others. These benefits and costs depend on consumers' selection and usage of channels. Savings refers to the benefit of finding lower prices, whereas exploration involves finding new brands and new experiences, and brand/channel switching usually represents a cost because it means using a less preferred channel or brand. The entertainment benefit stems from an enjoyment of shopping, and self-expression is the benefit of identifying with a peer group. Finally, search refers to the cost associated with extensive searching.

Third, these benefits and costs suggest a list of possibly associated psychographics and demographics (e.g., the savings benefit suggests price consciousness). In the next section, we elaborate on these psychographics and use our proposed framework to generate expectations about how they might relate to possible channel segmentation.

As an additional analysis (apart from the modeling framework given in Figure 2.1) we investigate channel attribute evaluations of customers among the resulting segments. Channel attributes refer to characteristics of store, internet and catalog channels (good prices, good information, exciting way of shopping etc.) and their perceptions by costomers. Different segments should provide varying evaluations of channel attributes since benefits and costs (savings, enjoyments, self expression etc.) we are looking at are expected to be related with channel attributes and the way how they are perceived by customers.

2.3 Psychographic And Demographic Covariates Of Multichannel Behavior

Our framework suggests that psychographic and demographic customer characteristics produce different perceptions of the costs and benefits of multichannel search and purchase strategies, which determine consumer utilities for search and purchase. To identify the relevant covariates, we start with the selected benefits and costs and use them to derive particular characteristics. Ailawadi et al. (2001) follow a similar procedure, consistent with marketing efforts to relate psychographics and demographics to consumer behavior (Campo et al., 2001; Sproles and Sproles, 1990; Steenkamp and Baumgartner, 1992).

2.3.1 Psychographic Variables

We borrow from Ailawadi et al. (2001) to present benefits and costs and the psychographic variables suggested by each in Table 2.2. For example, consumers select

channels, for search or purchase, to attain price savings, an economic benefit that should relate to a psychographic price consciousness variable. In Table 2.2 we list five additional psychographics thus identified: shopping enjoyment, innovativeness, motivation to conform, brand/retailer loyalty, and time pressure. Each psychographic variable in a multichannel context may relate to consumer utility in different phases of the shopping process.[3]

Table 2.2
Benefits and Costs of Channel Choice, Related Psychographics, and Expected Effects on Multichannel Consumer Behavior

BENEFITS/COSTS	Economic/Hedonic	PSYCHOGRAPHICS	Expected Effect
Savings	Economic	Price consciousness	+
Entertainment	Hedonic	Shopping enjoyement	+
Exploration	Hedonic	Innovativeness	+
Self-Expression	Hedonic	Motivation to conform	+/-
Switching	Economic	Loyalty	-
Search	Economic/hedonic	Time pressure	-

Price consciousness. Price consciousness is the degree to which consumers focus on paying low prices (Lichtenstein et al., 1990), so a price-conscious consumer seeks to minimize the price paid for an item, which relates to savings. Consumers maintain particular perceptions of prices in specific channels (Verhoef et al., 2007), such that price perceptions of a channel influence channel choice (Baker et al., 2002; Montoya-Weiss et al., 2003). For example, the Internet provides consumers with a wide range of information at a low acquisition cost (Hoffman and Novak, 1996) and the greatest utilitarian value for consumers who hope to attain price comparisons (Noble et al., 2005). As Balasubramanian et al. (2005) assert, one of the key advantages of multichannel behavior might be finding good deals by recognizing attractive offers across channels, though for research shoppers, such deals might result from negotiation (e.g., Morton et al., 2001; Zettelmeyer et al., 2000). In turn, price-

[3] Because we conduct an ad hoc analysis and have no prior information about the final segments, we do not state formal hypotheses about the effect of psychographic antecedents. However, we offer rationales for the possible effects of the selected variables on multichannel shopper behavior.

conscious consumers should maximize U(Search) by searching across several channels, which produces high U(Purchase|Search). Accordingly, we expect price-conscious consumers to display multichannel behavior during their search and, as a result, in their purchase process.

Shopping enjoyment. Shopping has both entertainment and emotional benefits for many consumers (Babin et al., 1994), and this variable relates closely to this hedonic utility (Ailawadi et al., 2001). The hedonic value and enjoyment gained from shopping also involve the fun and excitement people experience by trying new experiences, and custom designing products (Forsythe et al., 2006). In a channel selection context, Nicholson et al. (2002) find that the social setting, such as shopping with friends, influences channel selection, though Verhoef and Langerak (2001) report no significant association between perceived enjoyment of in-store shopping and the perceived relative advantage of online grocery channels. Verhoef et al. (2007) report a positive effect of enjoyment on channel selection for search and purchase. Thus, shopping enjoyment may influence channel selection.

Although no research indicates how shopping enjoyment might relate to multichannel behavior, customers who derive enjoyment from shopping intrinsically tend to like shopping. They thus can maximize U(Search) and U(Purchase|Search) simply by employing several channels for both search and purchase. These consumers are not bothered by the extra time required to engage in extensive shopping (i.e., they have high λ), and we therefore expect them to be associated with a segment that both searches and purchases across many channels.

Innovativeness. Because it provides consumers with the opportunity to try new products, exploration offers another hedonic benefit of searching; it also suggests innovativeness as a related psychographic (Ailawadi et al., 2001; Steenkamp and Baumgartner, 1992). Innovativeness refers to the degree which a person prefers to try new and different products and seek out new experiences (Midgley and Dowling, 1978), which requires extensive search. Innovative customers maximize their U(Search) by searching

channels, which then pays off in higher U(Purchase|Search), because their search uncovers different products and experiences. If we find a multichannel segment, we expect innovativeness to be associated with membership in that segment, at least for the search phase of the shopping process.

Motivation to conform. Self-expression, an important hedonic benefit that consumers seek in their shopping decisions, includes the motivation to conform, or the degree to which consumers need approval from people around them during their shopping decisions (Ailawadi et al. 2001; Chandon et al., 2000). Some rationales consider motivation to conform a personal trait that may influence multichannel behavior. For example, Keen et al. (2004) propose social norms as important determinants of channel selection, and Verhoef et al. (2007) find that channel selection behavior may depend on whether reference groups use similar channels. Because multichannel behavior continues to grow more common (e.g. Neslin et al., 2006), the motivation to conform to this important development should be greater. In turn, conformists should maximize both U(Search) and U(Purchase | Search) by following the crowd and employing several channels. However, a counterargument relates to the conformist's reference group; if the reference group is society as a whole, the preceding claim should hold, but if the reference group includes only particular friends and relatives, conformists may engage in multi- or single-channel behavior, depending on what their friends do. In that case, we do not expect motivation to conform to correlate with the segments we uncover.

Brand/retailer loyalty. Switching brands and retailers demands costs from consumers, who must take the time to investigate all options and may suffer if they purchase a less preferred brand. Consumers therefore may tend to remain loyal (e.g., Ailawadi et al., 2001; Klemperer 1995), and loyal consumers should focus on one channel and thereby deliberately cut off other options. Furthermore, consumers of more complex services appear to be locked in to a greater extent and thus less likely to switch to another retailer in the future (Van

Birgelen et al., 2006). We expect this tendency should also hold true for channel relationships. That is, to increase U(Search) or U(Purchase|Search), brand-/retailer-loyal customers likely remain with one channel, and we posit that loyal consumers will be more inclined to join a single-channel segment, for both search and purchase.[4]

Time pressure. Time pressure refers to a consumer's predisposition to consider time a scarce resource and plan its use carefully (Kleijnen et al., 2007). Nicholson et al. (2002) indicate that temporal variables, such as time of day and urgency of the purchase, influence channel selection behavior, and direct channels, such as the Internet and catalogs, offer time-saving benefits (Darian, 1987). Verhoef and Langerak (2001) demonstrate a positive relationship between time pressure and the relative advantage of an online channel, though the relationship between time pressure and multichannel behavior remains unclear. Kleijnen et al. (2007) recognize that greater perceptions of time convenience increase consumer perceived value, and time-conscious consumers seek opportunities to leverage their time. Accordingly, we expect that time-pressured shoppers have low discount factors (λ), which means they do not conduct extensive searches, whose benefits seem minor, and purchase in one channel. That is, time-pressured customers generally do not engage in multichannel behavior but display positive associations with single-channel behavior, for both search and purchase.

2.3.2 Demographic Variables

We provide an overview of our findings about the relationships between demographics and channel behavior in Table 2.3, which reveals ample evidence of such a relationship,

[4] Prior multichannel research investigates the relationship between loyalty and multichannel usage at the firm level. For example, Wallace et al. (2004) find that multichannel usage is associated with higher perceptions of the firm's channel offerings, which enhances customer satisfaction and loyalty. Multichannel users also are more loyal (Kumar and Venkatesan, 2005; Neslin et al., 2006). Ansari et al. (2006) posit three potential reasons for this increased loyalty: (1) channel effects, (2) self-selection, and (3) firms' marketing efforts; they confirm the loyalty effect is mainly due to marketing efforts. Together, these findings might imply a positive relationship between loyalty and multichannel behavior, but again, we note that we consider loyalty as a general trait.

though the evidence is not always consistent. Perhaps the most consistent and logically sound relationships emerge between multichannel behavior and income or education, such that people who earn higher incomes possess the means to shop across a variety of channels, even more expensive ones. More educated people also possess sufficient analytical training to extract the benefits of an extensive search. Therefore, people with higher incomes and education levels should increase their U(Search), which should make these traits associated with multichannel search and, as a result, multichannel purchase behavior. However, demographics do not always relate strongly to behavior, as the inconsistent results in Table 2.3 confirm. Soopramanien and Robertson (2007) further reveal that demographic factors and the factors embodied in them, though significant, may be less important for segmentation than attitudes and beliefs. Thus, we do not expect a very strong overall impact of demographics on multichannel segment membership.

Table 2.3
Impact of Demographics in Multichannel Environment (Past Research)

		IMPACT OF CONSUMER DEMOGRAPHICS					
Research	**Dependent Variable**	**Age**	**Gender**	**Welfare/ Income**	**Education**	**Urbanicity**	**Household Status**
Kushwaha and Shankar (2006)	Multichannel shopping	U-Shaped	NI	(+)	(+)	NI	(+)
Ansari et al. (2006)	Channel switching	(-)	NI	(+)	NI	NI	NI
Gupta et al. (2004)	Channel switching	NS	NS	NS	NS	NI	NI
Strebel et al. (2004)	Multichannel information search	(+)	(+)	NS	(+)	NI	NI
Inman et al. (2004)	Channel choice	(+/-)	NI	(+/-)	NI	(+/-)	(+/-)
Donthu and Garcia (1999)	Channel choice	NI	NI	(+)	(+)	NI	NI

Notes: (+) Positive, significant impact on dependent variable; NS: examined, no significant impact; (-) negative, significant impact on dependent variable; NI: research did not examine this variable; and (+/-) significant impact, neither positive nor negative, no dependent variable.

2.4 Research Methodology

2.4.1 Data Collection

We collect survey data about multi-channel attitudes and behaviors across several product categories –namely; mortgage, health insurance, holidays, books, computers, electronics, and clothing- selected in terms of their differences in complexity, purchase frequency, and tangibility. Our data is collected in May 2004 and consists of 364 Dutch consumers, members of a research panel of a marketing research agency in the Netherlands. During the preliminary stage, we select 3,000 panel members aged between 20 and 65 years. Through a telephone survey, we determine that 2,400 panel members had purchased one or more items from the seven selected product categories during the three months prior to the telephone interview. For each category, we select 130 panel members to participate, such that we sent questionnaires to 910 total panel members (130 × 7). Of these 910 potential respondents, 460 returned the survey, for a response rate of 52 percent. Subsequently, we delete 96 responses because these respondents did not fully complete the questionnaire. This yields a final sample of 364 respondents, or a 40 percent of response rate. Demographics of our sample match those of the population to whom the survey was mailed.

Respondents evaluate three channels (brick-and-mortar store, the Internet, and catalog) in terms of their appropriateness for two transaction phases (information search and purchase) and in seven product categories, even if they had not purchased from each category. We also ask about the included psychographic variables and channel choices for the product category in which the respondent recently had purchased. To obtain data about consumer demographics, we turn to the database of panel members, owned by the marketing research agency; we present these characteristics in Table 2.4. Because we select respondents on the

basis of their recent purchases in the product categories, the education level is relatively high, and respondents are approximately equally distributed across the seven product categories.

Table 2.4
Sample Characteristics (N = 360)

Gender	%	**Age**	%
Female	37,1	< 35	24,2
Male	62,9	36-45 years	34,6
		46-55 years	22,8
		>55	18,4
Education	%	**Family**	%
University	41,8	1-2 person households/ no children	47,3
High School (High Level)	39,6	Family with children < 5 years	11,5
High School (Low Level)	18,1	Family with children 5-14 years	25,3
Low Level Education	0,5	Family with children >14 years	15,9
Urbanization	%	**Welfare**	%
Strong Urbanization	39,6	A	20,1
Average Urbanization	18,7	B1	28,6
Low Urbanization	41,7	B2	29,4
		C	22,0

2.4.2 Model and Analysis

In our model we posit that channel usage for search or purchase depends on the utility the consumer derives from searching or purchasing from the various channels. These utilities depend on the benefits and costs of search and purchase, which relate to psychographic and demographic factors. The core of this framework is the utility function, written as,

$$U(\text{Shopping}) = U(\text{Search}) + \lambda U(\text{Purchase}|\text{Search})^{5}, \quad (1)$$

where:

U(Shopping) = Total utility of the shopping experience.

[5] The structural model explained above is not operationalized and used as a whole in our analysis due to further data requirements. Instead we use a reduced form of this analysis in this chapter. It should be noted that the structural equation (equation 1) could be operationalized in further research.

U(Search) = Utility gained from the search experience, depending on which channels the customer uses for search.

U(Purchase|Search) = Utility gained from the purchase phase, contingent on the search process and on which channels the customer uses for purchase.

λ = Time discount factor.

We assume the customer decides on a set of channels for both search and purchase that maximize Equation 1. This model is based on dynamic structural models literature (see Chintagunta et al., 2005; Erdem and Keane, 1996; Sun et al., 2003), in which customers make initial decisions by considering the impact those decisions will have on the utility they might gain from future decisions. Accordingly, in our utility framework customers decide which channels to search, anticipating the utility they will gain when they purchase. The discount factor λ ($0 < \lambda < 1$) reflects the extent to which the customer is forward looking, such that smaller values mean the customer does not consider purchase implications when deciding which channel(s) to search, whereas larger values mean the customer strongly anticipates the implications of his or her channel search on channel purchase. To maximize their utility, customers must assess various costs and benefits,. These assessments in turn may be colored by the customer's psychographic or demographic profile.

In our model, we consider shopping behavior a dynamic process that consists of both search and purchase phases, as represented by the total utility of shopping U(Shopping), which equals the sum of search U(Search) and purchase U(Purchase $\mid$ Search) utilities, discounted by a factor of λ. In our empirical model, we represent in reduced form search utility and purchase utility by U_{icd}, or consumer *i*'s attitude (i.e., perceived utility) toward channel *c* for a transaction phase *d*.

We employ Latent-Class Cluster Analysis (LCA) where the latent variable (customer segments) is considered as a categorical variable taking on K possible values, corresponding

to K segments. When employed with covariates, LCA indicates a segmentation structure, based on perceived channel utilities, and the impact of active or potential covariates on multichannel orientation. Specifically, in our model, we let

U_{icd} = Respondent *i*'s perceived utility of channel *c* for phase *d* of the decision process, such that *c* = 1, 2, or 3 signifies a retail store, Internet, or catalog, respectively, and *d* = 1 or 2 signifies search or purchase, respectively (see Equation 1).

s_i = Indicator of respondent *i*'s segment, equal to 1, 2, …, K, where K is the number of segments.

z_i = Vector of psychographic and demographic covariates for respondent *i*.

$f(U_{icd} \mid z_i)$ = Probability distribution for respondent *i*'s perceived utility of channel *c* for decision phase *d*, given the respondent's set of antecedent variables.

$g(U_{icd} \mid z_i, s_i)$ = Probability distribution for respondent *i*'s attitude toward channel *c* for decision phase *d*, given the respondent's set of antecedent variables and given that the respondent is in segment s_i.

$p(s_i = x \mid z_i)$ = Probability that respondent *i* is in segment *x*, given the respondent's antecedent variables.

The model therefore can be written as follows:

$$f(U_{icd} \mid z_i) = \sum_{x=1}^{K} \left[\prod_{d=1}^{2} \prod_{c=1}^{3} g(U_{icd} \mid z_i, s_i) \right] p(s_i = x \mid z_i). \qquad (2)$$

According to Equation 2, the probability distribution for a respondent's attitude (i.e., perceived utility) toward each channel for each decision phase, given his or her set of

antecedent variables, equals the weighted average of the probability distributions for these attitudes, such that the weights refer to the probability that the respondent is in segment s_i. In our analysis we assume that U(Search) and U(Purchase | Search) are independent. The LCA procedure also determines the number of segments *K* and estimates the function *g* that relates the covariates to the channel/decision phase attitudes for each segment.

2.4.3 Definition and Measurement of Variables

Segmentation basis: Attitudinal variables (U_{icd}). To examine the multichannel orientation of consumers, we use their self-reported attitudes toward channels, which refer to the perceived utility of each channel and shopping phase according to each consumer. We ask consumers to assess the appropriateness of each channel for their search and purchase efforts in each of the seven product categories, indicated on a five-point scale on which 1 = absolutely not appropriate and 5 = absolutely appropriate.

To derive the overall multichannel orientation scores per channel/transaction phase, we average the channel orientation scores over categories and thus derive 6 (3×2) U_{icd} variables for each respondent, representing the channel orientation scores of the consumers per phase, beyond categories. This score reveals the general attitude of each consumer for a specific channel and transaction phase. Equation 3 depicts the derivation of the y_{icd} variable,. Here y_{icd} variable is the average of the appropriateness evaluations (Eva_{icd}) for all product categories (*p*), which is also respondent i's perceived utility of channel *c* for phase *d* of the decision process in overall level :

$$U_{icd} = \frac{\sum_{p=1}^{7} (Eva)_{icdp}}{7}. \qquad (3)$$

Covariates of multichannel shopping. We use multi-item, five-point Likert scales to measure the psychographic variables (1 = fully disagree, 5 = fully agree), as detailed in Table 2.5. The coefficient alphas for our multi-item scales are all greater than .60 (see Table 2.5). Next, we use principal components analysis (PCA) to obtain the orthogonal factors, such that eigenvalues greater than 1 serve as the criterion to select the number of factors. The PCA results show that a six-factor solution explains 69 percent of the variation. According to Table 4, the PCA results also fall in line with the a priori defined variables.[6] An additional confirmatory factor analysis confirms our six-factor solution (goodness-of-fit index [GFI] = .90; confirmatory fit index [CFI] = .90; root mean squared error of approximation [RMSEA] = .07). We employ the resulting six orthogonal factor scores from the PCA in our latent-class model as covariates (i.e., the *z* variables in Equation 2)[7].

[6] For robustness checks, we remove items 1, 3, and 4 in the innovativeness measures and still obtain similar factors that consist of the remaining items from the previous set. These reduced factors yield similar results as active covariates of multichannel segmentation in subsequent analysis. In brief, reduced scales offer similar results, in support of the robustness of our innovativeness scale.

[7] We obtain similar results with regard to our PCA and Confirmatory Factor Analysis when we perform those analysis for the customers who respond the questionnaire (in further questions) for different product categories.

Table 2.5

Results of Principal Components Analysis: Reliability Analysis (Psychographic Variables)

	INNOVATIVENESS	LOYALTY	MOTIVATION TO CONFORM	SHOPPING ENJOYMENT	TIME PRESSURE	PRICE CONSCIOUSNESS	RELIABILITY (C. ALPHA)
I regularly purchase different variants of a product just for a change.	0.78						
I am one of those people who try new product firstly just after the launch.	0.73						
I find it boring to use the same product (or brand) repetitively.	0.72						0.78
I like to try new and different products.	0.70						
I always have the newest gadgets.	0.57						
I generally do my shopping in the same way.		0.72					
The brand of the product is important for me in my purchase decisions.		0.72					0.72
I generally purchase the same brands.		0.72					
The place where I do my shopping is very important to me.		0.72					
Being accepted by other people is very important to me.			0.78				
I find it very boring when other people criticize my behaviors.			0.75				0.64
I like to have some problems that I can solve without much thinking.			0.67				
I like shopping.				0.93			0.91
I take my time when I shop.				0.90			
I am always busy.					0.92		0.83
I usually find myself pressed for time.					0.90		
It is important for me to have the best price for the product.						0.87	0.70
I compare the prices of various products before I make a choice.						0.85	

2. 5 Estimation Results Across Categories

2.5.1 Multichannel Segmentation

We estimate our model for solutions with one to eight clusters and apply the Bayesian information criterion (BIC) statistic to select the best model, because BIC is more effective for detecting correct models in LCA cluster analysis than are other information criteria (e.g., Akaike) (Vermunt and Magidson, 2005; Zhang, 2004). We also employ classification error, which pertains to the proportion of cases we expect to be misclassified (Vermunt and Magidson, 2005), as a secondary criterion to select the optimal number of segments. Finally, we verify our interpretation of the derived segments (Wedel and Kamakura, 1999). That is, or model selection procedure relies on BIC, classification error, and interpretability criteria.

Table 2.6
Log-Likelihood Statistics for Model Selection

		LL	BIC(LL)	Class.Err.
Model1	1-Cluster	-2526.89	5183.51	0
Model2	2-Cluster	-2357.29	4985.85	0.0757
Model3	**3-Cluster**	**-2257.48**	**4927.75**	**0.0645**
Model4	4-Cluster	-2190.92	4936.17	0.0790
Model5	5-Cluster	-2141.67	4979.20	0.0915
Model6	6-Cluster	-2101.79	5040.97	0.0923
Model7	7-Cluster	-2062.26	5103.45	0.0886
Model8	8-Cluster	-2021.08	5162.61	0.0813

For the three-cluster model, we obtain a minimum BIC (4927); the classification error measure is also minimal (.0645) for this model (Table 2.6). For other model alternatives we obtain higher BIC and classification error values which lead us to consider three-cluster model as our final model . Furthermore, the three-cluster model is easier to interpret than the other models, so we choose it as our final model. In Table 2.7, we provide descriptive statistics of the attitudinal variables in each segment of our final model.

Table 2.7
Profile of the Final Segments (Latent Class Analysis) (N=360)

	Cluster1	Cluster2	Cluster3	p values (χ^2-test)
	40%	37%	23%	
Store (Information Search)	3.80	**4.52**	**4.84**	0.00
Store (Purchase)	3.75	**4.67**	**4.99**	0.00
Internet (Information Search)	3.22	**4.37**	3.09	0.00
Internet (Purchase)	2.66	**3.73**	2.38	0.00
Catalog (Information Search)	3.40	**4.24**	3.47	0.00
Catalog (Purchase)	2.82	**3.36**	2.45	0.00

Our results display a clear split among the consumer segments on the basis of their multichannel orientation. One segment reveals high channel orientation scores for all channels, which is likely the multichannel segment (Cluster 2); in contrast, another segment earns the highest scores toward the store channel but significantly lower scores for alternative channels (Cluster 3). Furthermore, we identify a segment with relatively low scores for channels in general (Cluster 1). This segment appears uninvolved in shopping channels overall; its members do not rate any channel highly and have no clear preferences relative to multichannel shopping.

Before we label these segments, we validate our results with a three-step process: To consider the effect of the covariates, we examine the differences across segments in terms of future usage intentions for each channel and phase, then examine the cross-segment differences of attribute evaluations for channels to determine their assessments by consumers with different perceived utilities of multiple channels.

2.5.2 Covariates of Multichannel Shopping

We provide the results for the psychographic and demographic covariates (*g* functions in Equation 1) in Table 2.8. These coefficients represent the impact of each covariate on membership in each segment. Therefore, a strong positive coefficient means that consumers

who score high on that antecedent are more likely to appear in that segment, whereas a large (magnitude) negative coefficient means consumers are not likely be in the segment.

Table 2.8
Covariates of Multichannel Behavior (Active Covariates)

	Cluster1	Cluster2	Cluster3	Wald	p-value
Intercept	0.14	1.41	-1.56	5.37	0.07
Innovativeness	**0.12**	**0.18**	-0.30	8.07	**0.02***
Loyalty	-0.18	-0.10	**0.28**	7.24	**0.03***
Motivation to conform	-0.10	-0.07	0.17	2.83	0.24
Shopping enjoyment	-0.22	**0.17**	**0.06**	7.76	**0.02***
Time pressure	0.06	-0.11	0.04	1.43	0.49
Price conciousness	-0.05	**0.22**	-0.16	4.99	0.08
Gender	-0.06	0.12	-0.05	1.39	0.50
Age	0.00	-0.02	0.02	2.92	0.23
Urbanization	-0.08	0.02	0.06	1.74	0.42
Welfare	-0.04	0.00	0.03	0.12	0.94
Education	0.12	-0.09	-0.04	2.78	0.25
Income 1	-0.03	0.05	-0.03	0.14	0.93
Income 2	0.11	-0.08	-0.02	1.20	0.55
Household 3	0.09	-0.18	0.09	1.04	0.59
Household 2	-0.06	-0.24	0.30	2.86	0.24
Household 4	0.03	-0.08	0.06	0.31	0.86
Household 1	-0.15	0.19	-0.04	1.37	0.50

Significance levels: **(1%) and *(5%)

We find significant coefficients for innovativeness, loyalty and shopping enjoyment. Price Consciousness is also found to be a significant covariate, but at the .10 significance level (p=0,08). Specifically, innovativeness strongly determines membership in Segment 2 and, to a lesser extent, Segment 1 but keeps consumers out of Segment 3. This finding makes sense, in that innovative consumers should explore different channels; recall that the exploration benefit motivates us to include this psychographic variable. Shopping enjoyment also reveals a strong association with Segment 2 but a negative association with Segment 1. Again, this finding makes sense, because the generally lower scores among Segment 2 in

Table 2.7 suggest they are less enthusiastic about store shopping.[8] Loyal consumers are more likely to be members of the Segment 3 and not of the other two segments. Our loyal measure involves brand and retailer loyalty, not channel loyalty *per se*, whereas Segment 3 seems loyal to a particular channel, namely, brick-and-mortar stores. Thus, our findings suggest that retailer, brand, and channel loyalty go together. Finally, we find a marginal evidence ($p < .10$) of price consciousness. Consumers with higher multichannel orientation tend to be relatively more price conscious than consumers in other segments. The significant differences among the segments thus apply to their psychographics, not their demographics. This result offers yet another demonstration of the value of psychographic versus demographic variables.

2.5.3 Future Channel Usage Intentions

In our survey, we also ask respondents about their future usage intentions toward various channels for search and purchase, with regard to only one particular product or service category. We analyze whether the future channel choice intentions of the final segments differ and provide the results of our analysis in Table 2.9.

Table 2.9
Future Channel Usage Intention

	Cluster 1	Cluster 2	Cluster 3	*p*-value
Information Search (Future) - Store	69.70%	70.00%	**81.20%**	0.11
Information Search (Future) - Internet	61.07%	**75.38%**	57.64%	**0.01***
Information Search (Future) – Catalog	43.00%	**48.50%**	41.20%	0.51
Purchase (Future) – Store	59.06%	56.92%	**75.29%**	
Purchase (Future) – Internet	**14.09%**	**15.38%**	2.35%	0.08
Purchase (Future) - Catalog	4.02%	3.07%	1.17%	

Significance levels: **(1%) and *(5%)

[8] We cannot assert causality. Shopping enjoyment as a psychographic trait may cause consumers to be enthusiastic about all channels, or consumers may be highly satisfied with all shopping channels and therefore enjoy shopping.

Significant differences appear among our final segments, in terms of their future channel usage intentions, which is in line with customers' channel orientations in our prior model. Segment 3 displays a relatively higher future intention to use the store channel for information search and purchase, in support of our findings that this Segment 3 has the highest orientation scores for stores but the lowest for alternative channels in our prior model. Segment 2, which displays a multichannel orientation in our LCA segmentation, exhibits higher future usage intentions for alternative channels. This finding also confirms the multi-channel attitude of Segment 2, implying a similar tendency for future channel usage. Finally, Segment 1 indicates roughly the same purchase intention scores as Segment 2 in terms of future usage intention, but lower scores for search, especially on the Internet and in catalogs. As noted, these consumers apparently manifest their dislike of shopping by choosing not to search as much, which implies a low search utility for Segment 1 in our LCA segmentation. Considering our results, consumers' future channel usage intentions are in line with their present orientations toward various channels - which are our basis for segmentation. Furthermore, we also calculate the average number of channels used to search for information and find that Segment 2 uses the most (2.0), whereas Segments 1 and 3 display somewhat lower scores (1.8 and 1.9) ($p = .10$). This confirms the multi-channel orientation of Segment to in comparison to Segment 1 and Segment 3. Apart from this, Segment 2 also reveals the largest percentage of research shoppers (80.6 %), though the differences among segments on this factor are not significant ($p > .10$).

2.5.4 Attribute Evaluations of Channels

As a final, additional analysis, we compare channel attribute evaluations among the segments, measured on a three-point scale (1 = does not apply, 3 = applies a lot). Different segments should provide varying evaluations of channel attributes; therefore, we examine the

differences using a Kruskal-Wallis test. Specifically, we consider the attribute evaluations of the Internet and catalogs, because our derived segments mainly differ on these channels. Although we compare segments with regard to store attributes, we find no significant variations, which suggest that multichannel segments do not differ according to assessments of store channels but rather only to their assessments of alternative channels. We provide the results of our analysis in Table 2.10.

Table 2.10
Attribute Evaluations (Validation of Segmentation)

	KW Sig.	Cross Segment Variations
Internet - Good Prices	<0.05	C2>C1, C2>C3
Internet - Good Price/Quality Value	<0.05	C2>C3
Internet - Attractive Offers	<0.01	C2>C1, C2>C3
Internet - Good Information	<0.01	C2>C1, C1>C3, C2>C3
Internet – Comprehensive Information on Products	<0.01	C2>C1, C2>C3
Internet - Good Product Variety	<0.01	C2>C1, C1>C3, C2>C3
Internet - Always Up-to-Date Products	<0.01	C2>C1, C2>C3
Internet - Low Privacy	<0.10	C2>C3
Internet - Too Complex for Shopping	<0.01	C1>C3, C2>C3
Internet - A Modern Way of Shopping	<0.05	C2>C1
Internet - An Exciting Way of Shopping	NS	
Internet - Realiable for Shopping	<0.05	C2>C3
Internet - Good to Form Ideas	<0.01	C2>C1, C2>C3
Internet - Nice for Shopping	<0.01	C2>C1, C2>C3
Internet - A Fast Way of Shopping	<0.01	C2>C1, C2>C3
Catalog - Good Prices	NS	
Catalog - Good Price/Quality Value	NS	
Catalog - Attractive Offers	NS	
Catalog - Good Information	NS	
Catalog – Comprehensive Information on Products	<0.05	C1>C3, C2>C3
Catalog - Good Product Variety	NS	
Catalog - Always Up-to-Date Products	NS	
Catalog - Low Privacy	<0.01	C1>C3, C2>C3
Catalog - Too Complex for Shopping	NS	
Catalog - A Modern Way of Shopping	NS	
Catalog - An Exciting Way of Shopping	<0.01	C1>C3, C2>C3
Catalog - Reliable for Shopping	<0.05	C2>C1
Catalog - Good to Form Ideas	<0.01	C1>C3, C2>C3
Catalog - Nice for Shopping	<0.01	C1>C3, C2>C3
Catalog - A Fast Way of Shopping	<0.10	C2>C1

Notes: Kruskal-Wallis significance, significance levels: <0.01=(1%), <0.05=(5%), <0.10=(10%), NS= Not Significant; C1= uninvolved shoppers C2= multichannel enthusiasts, C3=store focused.

In general, consumers in Segment 3 provide the lowest attribute evaluations for the Internet and catalogs, whereas those in Segment 2 provide the most favorable evaluations. Evaluations by Segment 1 consumers generally fall in the middle and again do not imply clear preferences. The results of our analysis thus match the overall attitude results from Table 2.7.

2.5.5 Interpretation and Labeling of Segments

On the basis of these analysis results, we may label our segments. Segment 2, which reveals favorable attitudes toward multiple channels for search and purchase and is characterized by high innovativeness, high shopping enjoyment and low loyalty, contains consumers who tend to use the Internet and catalogs for both information search and purchase. Accounting for 37 percent of respondents, we label this segment "multichannel enthusiasts." Segment 3, or 23 percent of respondents, reveals favorable attitudes toward brick-and-mortar stores and relatively unfavorable attitudes toward alternative channels. This segment is further characterized by high loyalty, somewhat higher shopping enjoyment and low innovativeness; we refer to it as the "store-focused" segment, as confirmed by their greater tendency to use the store for both search and purchase. Finally, Segment 1 displays relatively more favorable attitudes toward alternative channels than the store-focused segment but relatively lower attitudes toward alternative channels regarding multi-channel enthusiasts. We note that those customers do not have the highest or lowest orientation for any channel (for all transaction phases) in comparison to Segment 2 and Segment 3. These consumers do not rate any channel or phase distinctively, suggesting they have no clear preferences toward particular channels and are not particularly enthusiastic about the prospect. Our additional examinations of past channel usage confirm that this segment, approximately 40 percent of the respondents, does not prefer any alternative channels but exhibits low loyalty, low shopping enjoyment, relatively lower price consciousness, and slightly high innovativeness.

This description implies a low-involvement attitude toward shopping (Goldsmith and Emmert, 1991; Laurent and Kapferer, 1985; Mittal, 1995). According to literature, consumer involvement can explain consumer behavior (Goldsmith and Emmert, 1991) and provides an effective tool for segmentation (Lockshin et al., 1997). In summary , we identify the fit among multichannel orientation, psychographics, and low-involvement consumer behavior in Segment 1 and designate it the uninvolved segment. Our final segmentation thus consists of :

- SEGMENT 1: Uninvolved shoppers
- SEGMENT 2: Multichannel enthusiasts
- SEGMENT 3: Store-focused consumers

2.6 Category-Specific Estimation Results

2.6.1 Multichannel Segmentation Across Categories

In the previous section, we aggregate the results across the seven product categories though these categories vary in terms of complexity, purchase frequency, and tangibility. To explore potential cross-category variations, we next apply our LCA model separately to obtain specific results for each category. Considering the BIC statistics for one to eight clusters for each product category we find that in four product categories, the three-cluster model is optimal, whereas for the other three categories the four-cluster model is best. That is, the category specific statistics closely match our previous overall-level analysis; we again employ the three-cluster alternative as the solution for all seven categories and use the same process to interpret the clusters. The results appear in Table 2.11.

Table 2.11
Latent Class Segmentation (Cross Category Analysis) (N=360)

	LATENT CLASS SEGMENTS (CROSS CATEGORY)					
OVERALL	Uninvolved Shoppers	40.0%	Multichannel Enthusiasts	37.0%	Store Focused	23.0%
Books	Uninvolved Shoppers	34.0%	Multichannel Enthusiasts	43.0%	Store Focused	23.0%
Mortgage	Uninvolved Shoppers	63.0%	Research Shoppers	20.0%	Store Focused	17.0%
Electronics	Uninvolved Shoppers	17.0%	Multichannel Enthusiasts	56.0%	Store Focused	27.0%
Holidays	Uninvolved/ + Research Shopping	53.0%	Multichannel Enthusiasts	28.0%	Store Focused	19.0%
Clothing	Store + Catalogue Search	62.0%	Multichannel Enthusiasts	13.0%	Store Focused	25.0%
Computers	Uninvolved Shoppers	31.0%	Multichannel Enthusiasts	37.0%	Store Focused	32.0%
Insurance	Uninvolved Shoppers	39.0%	Multichannel Enthusiasts	35.0%	Store Focused	26.0%

Several results in the category-specific findings are consistent with the aggregate results, though we also find some differences. In terms of the consistencies that dominate our cross-category results, we find that the segmentation scheme for books, electronics, computers, and insurance is the same as that for the overall sample, though the relative percentages of customers in each segment differ.

In three categories, two of the three segments remain intact, but another and different segment(s) emerges. For example, in the mortgage category, instead of a multichannel enthusiasts segment, we discover a research shopper segment, characterized by an attitude that embraces alternative channels for information search but strictly prefers the store channel for purchase. In the holiday category the uninvolved segment tend to move into research shopping segment as well. That is, uninvolved shoppers who want to purchase a holiday but exhibit low shopping involvement overall still maintain a slightly higher attitude toward information search in alternative channels. Finally, in the clothing category, the uninvolved segment is replaced by a segment that searches extensively in the store and catalogs.

Category characteristics influence the formation of consumer segments, based on their multichannel orientations. One possible explanation relies on the distinction between “high

touch" and "low touch" product categories (Chiang and Dholakia, 2003; Lynch et al., 2001). The need to inspect the product before purchasing underlies preference for brick-and-mortar shopping methods for some products, such as clothing, sporting goods, and health products. In contrast, for low touch products such as airline tickets and software, consumers may favor online services and multichannel shopping because they place importance on shopping quickly (Lynch et al., 2001). Product categories like holidays, mortgage, and insurance require more face-to-face personal assistance, so consumers favor brick-and-mortar shopping. These explanations appear relevant, based on the larger multichannel segments in categories such as computers, books, and electronics compared with the smaller multichannel segments in clothing, holiday, and mortgage categories.

2.6.2 Covariates of Multichannel Shopping Across Categories

We display the effect of the covariates of multichannel orientation across multiple categories in Table 2.12. In our category-specific analysis of covariates, the aggregate results persist, though with some important differences. Consistent with aggregate analysis, we find innovativeness remain as the psychographic variable most commonly related to segment membership – though with .10 significance level in mortgage and clothing categories. However, innovativeness does not serve this function in the holidays and insurance categories. We find a significant impact of price consciousness in two of the seven categories, and loyalty has an effect in the holiday and book categories, in which contexts store-focused shoppers are more loyal. Shopping enjoyment has a significant effect only for clothing, and segments that reveal higher store scores enjoy shopping more. Our cross-category analysis also reveals a few significant results for sociodemographics, similar to our aggregate analysis.

Table 2.12
Covariates of Multi-Channel Behavior (Cross Category Analysis)

	Books	Mortgage	Electronics	Holiday	Clothing	Computers	Health Insurance	OVERALL
Innovativeness	0.00**	0.07	0.00**	0.35	0.08	0.00**	0.16	0.02*
Loyalty	0.03*	0.21	0.52	0.05*	0.45	0.92	0.38	0.03*
Motivation to Conform	0.16	0.44	0.07	0.62	0.75	0.66	0.39	0.24
Shopping Enjoyment	0.53	0.70	0.98	0.24	0.00**	0.39	0.58	0.02*
Time Pressure	0.13	0.66	0.98	0.55	0.34	0.80	0.23	0.49
Price Consciousness	0.21	0.97	0.10	0.03*	0.04*	0.07	0.12	0.08
Gender	0.01*	0.09	0.00**	0.77	0.56	0.01*	0.51	0.50
Age	0.54	0.87	0.15	0.41	0.97	0.14	0.01*	0.23
Urbanization	0.12	0.41	0.85	0.41	0.04*	0.42	0.26	0.42
Welfare	0.68	0.28	0.85	0.70	0.41	0.97	0.42	0.94
Education	0.04*	0.08	0.50	0.88	0.05*	0.57	0.41	0.25
Income 1	0.55	0.65	0.66	0.01*	0.56	0.94	0.57	0.93
Income 2	0.46	0.78	0.61	0.29	0.99	0.97	0.12	0.55
Household 3	0.77	0.60	0.77	0.48	0.75	0.78	0.24	0.59
Household 2	0.19	0.38	0.83	0.74	0.35	0.48	0.64	0.24
Household 4	0.44	0.63	0.74	0.86	0.81	0.95	0.43	0.86
Household 1	0.45	0.50	0.67	0.88	0.38	0.33	0.12	0.50

Notes: Category-level LCA model, active covariates (*p*-values): Significance levels: **(1%), *(5%)

Overall, our category-specific analyses support our segmentation of consumers into multichannel enthusiasts, uninvolved shoppers, and store-focused shoppers. The covariates that most consistently differentiate among these segments are innovativeness and loyalty, as confirmed in the aggregate analysis. However, we recognize some category-specific effects, because not all covariates that are consistent in aggregate remain consistent across categories (e.g., shopping enjoyment).

2.7 Discussion

In this paper we attempt to expand current understanding of consumer behavior in a multichannel retailing context and contribute specifically to emerging multichannel literature by executing an in-depth segmentation study. Our segmentation addresses two phases of the shopping process, information search and purchase, and benefits from a dynamic structural

utility framework that enables us to analyze shopping as a multiphase process, in which the perceived utilities of different phases determine consumers' attitudes toward multiple channels. Theoretically, we relate these utilities, depending on the benefits and costs of search and purchase, to psychographic and demographic variables. That is, we consider the impact of psychographic and sociodemographic covariates on segment membership.

2.7.1 Findings

To summarize the contributions of our study to multichannel research, we detail its substantive findings, which appear essential for a thorough understanding of multichannel consumer behavior and marketing strategy development.

- We provide a clear case for segmentation based on consumer attitudes toward various channels for search and purchase.
- Psychographics predict multichannel segment membership.
- Multichannel-based consumer segments differ across product categories

In our analysis, we find strong evidence of a multichannel enthusiasts segment that consists of consumers who have positive attitudes toward all channels. The store-focused segment orients toward brick-and-mortar stores instead of other channels, whereas the uninvolved-shopper segment is characterized by less preference for any channel or shopping phases in general. This is consistent with our expectations, since we use utility framework for shopping and certain consumers would be expected to have low perceived utility toward shopping process in general. Our segmentation study provides new insights on multi-channel consumer behavior. Different consumer segments vary in their attitudes toward different channels in a multichannel setting.

We find no research shopping segment in our aggregate analysis though there are customer segments in few categories which use different channels for information search and purchase. Furthermore, channel choice and multi-channel orientation of consumer segments show similar patterns in information search and purchase phases. In other words, there are no consumer segments with varying multi-channel orientation in different phases. This is a surprising result since prior research provides some empirical evidence on research shopping phenomenon (Verhoef et al., 2007), and it is likely that there is a segment which is consists of research shoppers. We believe that further research is required to extend our understanding of research shopping phenomenon which could include segmentation in different categories. Another surprising result is that, we find no online customer segment which might have higher orientations solely for the online channel, but instead we find multichannel enthusiasts segment which has high orientation toward online channel together with other channels.

Our results reveal that segment memberships are associated with psychographics. Existing research into the determinants of consumer behavior (i.e., Ailawadi et al. 2001) suggests the impact of several hedonic and economic covariates on utility perceptions on different phases and channels. We find interesting results in this context. First, multichannel enthusiasts tend to be more innovative, and in support of prior theory that innovative consumers explore and use new alternatives (e.g., Steenkamp and Baumgartner, 1992).

Second, store-focused consumers generally are more loyal than multichannel enthusiasts. The finding is very interesting since prior research also indicates that multi-channel consumers (i.e. consumer purchasing through multiple channels) have higher purchase volumes and they tend to become disloyal over time (Ansari et al. 2006). Our study sheds some light on the reasons for this finding, in that we find multichannel enthusiasts generally are less inclined to be loyal to brands or particular retailers.

Third, in contrast with prior literature that relates shopping enjoyment negatively to the use of alternative non-store channels (e.g., Darian, 1987; Verhoef and Langerak, 2001), our results imply that multichannel enthusiasts consider shopping a pleasurable experience than do the other two segments, and uninvolved shoppers do not consider shopping a pleasurable experience at all. Considering our utility framework, uninvolved shoppers do not gain a hedonic utility from shopping, as confirmed by their channel orientations. We also find a weak evidence of price-consciousness effect ($p < .10$), with a split between multichannel enthusiasts (price conscious) and store-focused (not price conscious). This result matches prior findings of differences in prices between channels (i.e., Brynjolfsson and Smith 2000; Clemons et al., 2002). Regarding the relatively marginal impact of price consciousness, one should note that, other factors such as: retailer characteristics and market characteristics significantly influence online prices (Venkatesan et al., 2007a) and thus consumer perceptions. We do not find significant relationships with sociodemographics, which confirms prior findings that consumer behavior is driven more by psychographics (e.g., Ailawadi et al. 2001). Our results demonstrate that segment membership is affected by hedonic and economic variables.

Our segmentation scheme generally applies to specific product categories, though with some interesting refinements due to different multichannel adoption levels, varying shopping patterns, and perceptions toward channels. For example, the multichannel enthusiast segment remains quite small in the clothing category but accounts for a majority of consumers in the electronics category. The covariates also may differ across categories.

2.7.2 Management Implications

Our research has several implications for managers. For example, we identify a large segment of consumers who are enthusiastic about using multiple channels during their shopping process. Therefore, managers should maintain well-coordinated channels that provide similar prices and products; otherwise, the multichannel enthusiasts segment may become confused and frustrated with the retailer. This segment also provides an argument against single-channel strategies. Research suggests additional channels enhance customer satisfaction and ultimately customer loyalty (e.g., Wallace et al., 2004) and positively influence firm performance (e.g., Deleersnyder et al., 2002). The existence of the multichannel enthusiasts segment is consistent with this finding.

The different segments also suggest the need for firms to develop specific strategies for each. For example, marketers should create retail formats that provide multichannel enthusiasts with an enjoyable shopping experience in which they can be innovative. However, marketers should offer uninvolved shoppers more efficient and perhaps less frenetic channel formats to generate and enhance positive attitudes toward shopping in general. In this case, managers could direct uninvolved shoppers to specific channels but must maintain optimal channel allocation, because uninvolved shoppers remain unattached to any channel in particular. Promotions and other incentives therefore might push uninvolved shoppers to the channels the firm prefers. Finally, firms pursuing the store-focused segment should improve the store experience by enhancing shopping enjoyment.

These multi-channel segments differ in their perceptions of the attributes of the different direct channels, so firms also might improve some attributes (i.e., shopping complexity) to expand their consumer base. The segments we uncover in our overall analysis appear consistently in the specific segments but with important exceptions. Therefore, marketers must recognize the importance of category characteristics in determining multichannel-based customer segments. For example, marketeers could offer more innovative

channel formats and touch points with more frenetic content to their customers using alternative channels for books and home-electronics. On the other hand, loyalty programs and price deals would be of help to steer customers to preferred channels in categories such as holidays and clothing. Because of these category-specific nuances, we encourage managers from different sectors to conduct ad hoc research, using our proposed method, to segment and manage their consumer base effectively.

2.7.3 Research Limitations and Further Research

Certain limitations characterize this research. First, we lack behavioral and longitudinal data across channels. In our research we might encounter common method bias, since we have only survey data there is no way to cross-validate our findings. Although this approach limits the generalizability of our findings, studying actual behavior across seven categories in this setting entails an extensive task. Moreover, not all consumers use each purchase channel in all categories, making actual behavioral data extremely difficult to obtain. In order to enhance the validity, we conduct three experiments which repeat –and include- the prior experimental designs. In this way, we confirm our findings across experiments. Nonetheless, the increasing use of more channels may enable additional research to focus on measuring actual channel use. Second, we do not examine after-sales as a third shopping process phase, mainly because we aim to gather full information about multiple channels and various categories, whereas the usage of after-sales remains rare among consumers in some of the chosen channels and categories. That is, consumer evaluations for the after-sales phase would be unreliable. However, we strongly encourage marketing researchers to investigate the role of the after-sales phase in a multichannel setting, because this additional focus may broaden our understanding of multichannel consumer behavior. Similarly, our research ignores relatively new channels, such as Web logs, virtual communities, and M-commerce.

Again, adoption of these new channels remains rather low. Third, we include data only from the Netherlands. Researchers also should gather data in other Western countries or focus on non-Western economies, such as Turkey or India (e.g., Burgess and Steenkamp 2006).

Other potential research directions move beyond the limitations we identify. One potential research direction would further understanding of the effects of using multiple channels on consumer loyalty. Second, further research could pursue an understanding of how firms react to the increasing presence of multichannel consumer. Finally, though the segments we identify are similar across categories, their covariates are less consistent. Therefore, researchers should attempt to generalize and develop theories with respect to how these covariates may differ across categories.

Appendix 2.1
Description of Scale Items Used (Psychographics)

Innovativeness (Goldsmith and Hofacker, 1991)

I regularly purchase different variants of a product just for a change.

I am one of those people who try a new product first, just after the launch.

I find it boring to use the same product (or brand) repetitively.

I like to try new and different products.

I always have the newest gadgets.

Loyalty (Sproles and Sproles, 1990)

I generally do my shopping in the same way.

Brand of the product is important for me in my purchase decisions

I generally purchase the same brands

The place where i do my shopping is very important for me

Motivation to Conform – Opinion Seeking (Flynn et al., 1996)

Being accepted by other people is very important for me

I find it very boring when other people criticize my behaviors

I like to have some problems which i can solve without much thinking

Shopping Enjoyment (Dawson et al., 1990; Babin et al., 1994)

I like shopping

I take my time when i do shopping

Time Pressure (Srinivasan and Ratchford, 1991)

I am always busy

I usually find myself pressed for time

Price Consciousness (Lichtenstein et al., 1993; Sproles and Sproles, 1990)

It is important for me to have the best price for the product

I compare the prices of various products before i make a choice

3 Customer Responses to Forced Channel Migration[9,10]

"Migrating customers to a new channel can be a pain—for them, the company and its channel partners"

—Myers, Pickersgill, and van Metre 2004

3.1 Introduction

As companies implement multichannel strategies and attempt to manage consumers' channel usage behavior, the migration of customers from traditional to new and alternative channels seems ubiquitous (Lund et al. 2002). Most recent firm efforts attempt to steer customers to these new and alternative transaction channels. For example, Datamonitor (2006) notes that European banks have successfully driven their customers to the Internet. McAfee, best known for its Internet security software, provides free customer technical support online but charges anywhere from $9.95 to $59.95 for customer support on the telephone. To prompt its customers to use its online check-in option, Ryanair forces customers to wait in lines and pay additional fees if they check in at the airport. These moves all are intended to increase the effectiveness of channel operations, yet moving customers to alternative channels also may create dissatisfaction and disloyalty.

[9] This research was financially supported and executed in close cooperation with the Customer Insights Center, University of Groningen, and MetrixLab Online Market Research. We acknowledge Scott A. Neslin, Luk Warlop, Tammo H.A. Bijmolt, Jenny van Doorn, and Marijke Leliveld for their comments on a previous version of this paper. We also thank Floor Rink for her helps with data collection for this research.

[10] This research is a finished working paper: Konuş, Umut, Debra Trampe, and Peter C. Verhoef (2009), "Customer Responses to Forced Channel Migration," University of Groningen, the Netherlands.

When channel migration strategies are voluntary, customers can choose among multiple, fully available channels. However, when customers' channel preferences do not match channel management policies, companies face increased costs and redundant or ineffective channels (Myers, Pickersgill, and van Metre 2004). Facing such problems, companies have increasingly started to implement different strategies to steer their customer base to new and alternative channels

Thus, we distinguish between voluntary versus forced customer channel migration strategies. Forced channel migration refers to the process of moving customers from one channel to another through coercive actions that enhance the efficiency of the firm's channel operations. A forced migration strategy, which generally eliminates an existing transaction channel, should lead to channel switching, unless the customer moves to another service provider. This elimination of channels could cause frustration and emotional discomfort for customers (Mazis, Settle, and Leslie 1973; Venkatesan 1966), which we label "customer reactance" towards the company (Clee and Wicklund 1980). Mitigation strategies by firms might counteract the negative consequences of a totally forced strategy by, for example, offering rewards or punishments that steer customers to alternative channels in a backhanded but still forced manner. Such migration is more common in business settings. These various forms of forced strategies likely have different impacts on core customer metrics, such as future channel preferences and satisfaction. Moreover, forced migration strategies might target specific segments in their attempts to reduce costs and enhance operational efficiencies, such that the distinction between high- and low-value customers may be significant in this context. Research therefore needs to investigate forced customer channel migration, its consequences, and the pertinent management strategies. We accordingly address the following research questions:

1. What is the impact of forced channel migration on (a) customer reactance, (b) customer satisfaction, and (c) customer compliance?
2. How can firms mitigate the negative consequences of forced migration? Do incentive programs work in this context?
3. How do different customer segments respond to forced migration? Do high- or low-value customers vary in their responses?

Although forced channel migration has become a common business practice, research generally has neglected its implications (e.g., Neslin et al. 2006). We consider the effect of forced channel migration strategies on customer metrics and thus address not only the direct consequences but also how incentive programs might mitigate negative effects. Importantly, we also examine the differential responses of low- and high-value customers

In the following section, we offer a review of existing literature pertaining to forced migration strategies and their dynamics. After we present our conceptual model, we formulate our hypotheses and present three experimental studies. Finally, we end with a discussion of the managerial implications of our findings, some limitations, and issues for further research.

3.2 Literature Overview And Conceptual Framework

Prior research mainly centers on voluntary, rather than forced, channel migration. For example, Thomas and Sullivan (2004) find that consumers who use single versus multiple channels respond to different customer profitability drives. Ansari, Mela, and Neslin (2008) also reveal that customer characteristics, marketing actions, and channel experience affect channel migration behavior, and Kushwaha and Shankar (2006) suggest that channel migration results from customer demographics, such as age, welfare, and educational level, as well as customer shopping traits. Kumar and Venkatesan (2005) in turn indicate that customers who migrate to multichannel contacts tend to be cross-buyers, exhibit higher levels

of return behavior and higher purchase frequencies, and remain customers longer. Gensler and colleagues (2006) demonstrate that migrating to an online channel has a positive impact on aggregate customer profitability. Finally, Verhoef, Neslin and Vroomen (2007) reveal that attribute-based decision-making, lack of channel lock-in and cross-channel synergy are at work in making the customer channel migration from internet search to store purchase which is also known as "research shopping". Although these studies provide valuable insights into the dynamics, antecedents, and consequences of voluntary channel migration, they tell us little about the processes and consequences of forced channel migration.

In Figure 3.1, we present the conceptual framework of our study, which highlights reactance as a central variable because of its potential impact on customer satisfaction (Brehm et al. 1966; Clee and Wicklund 1980). Reactance refers to an emotional reaction that directly contradicts regulations that threaten or eliminate individual behavioral freedoms. Thus, reactance might occur when someone feels pressured to accept a certain view or attitude (Brehm et al. 1966; Brehm and Brehm, 1981). Considerable empirical evidence associates a lack of freedom of choice, reactance, and customer dissatisfaction (Amyx and Bristow 2001; Fitzimons 2000; Zhang and Fitzsimons 1999). In Study 1, we focus specifically on the effect of forced migration on customer reactance and thus customer satisfaction and thereby determine whether reactance functions as a mediating variable.

Another component of our model pertains to the role of incentive programs in managing firm-driven channel migration strategies. If, for example, a strategy reinforces human behavior through incentives (Bickel and Vuchinich 2000; Cameron and Pierce 2000**;** Rothschild 1999), it represents a reinforced channel migration approach. Myers, Pickersgill, and van Metre (2004) propose that incentive programs provide efficient tools for guiding customers to selected channels, yet no empirical study investigates the impact of incentive programs on customer channel intentions. Several studies consider the impact of incentive

programs on customer behavior according to whether they use rewards (De Wulf, Odekerken-Schroeder, and Iacobucci 2001; Kim, Shi, and Srinivasan 2001; Oliver 1980) and punishments (Bolton and Lemon 1999; Sinha and Mandel 2008), and comparative evaluations of gains and losses suggest some practical insights into incentive management (Kahneman and Tversky 1979). Monetary and nonmonetary incentives may have varied influences on consumer behavior (Masclet et al. 2003) as different incentives that create the same outcomes could lead to different emotional reactions (Kahneman and Tversky 1979). Framing incentives as either gains or losses offers a means to investigate customers' responses to various incentives to migrate, using similar monetary or nonmonetary outcomes. In Study 2, we thus evaluate the impact of various incentives on customer reactance and satisfaction in response to a firm-driven channel migration strategy. Therefore in Study 2, we evaluate six alternative strategies, which are forced/voluntary and incentive strategies: rewards/punishments which could be monetary or non-monetary.

Because companies' main aim is to steer customers to their preferred channels, customer compliance represents an essential metric (Myers, Pickersgill, and van Metre 2004). Specific research into the impact of forced actions on customers' channel usage intentions is lacking, but some studies consider the impact of coercive actions on compliance and future behavioral intentions (Botti et al. 2008; Crawford et al. 2002). Psychology literature provides some evidence that reactance is a significant mediator of the impact of coercion on compliance behavior (Dillard and Shen 2005; Dowd 1991; Jahn and Lichstein 1980; Tracey, Ellickson, and Sherry 1989). However, no marketing literature investigates the potential mediating effect of customer reactance on compliance and future behavioral attitudes.

The final element in our framework is the moderating role of customer value segments, which depend on behavioral metrics (e.g., purchase frequency, category-wide spending levels, number of products used) derived from customer databases (Banasiewicz

2004; Reinartz and Kumar 2000; Smith and Gupta 2002). Research that uses behavioral metrics reveals that high- and low-value consumers may exhibit different channel usage behavior and react differently to firms' marketing operations (Smith, Bolton, and Wagner 1999). Moreover, firms may be reluctant to force high-value customers to change channels. Accordingly, in Study 3, we consider the impact of forced and reinforced (incentive-based) channel migration strategies on customer compliance to determine whether the effects of forced migration differ between high- and low-value customers. Furthermore, we replicate and validate the results of Studies 1 and 2 by studying actual customers.

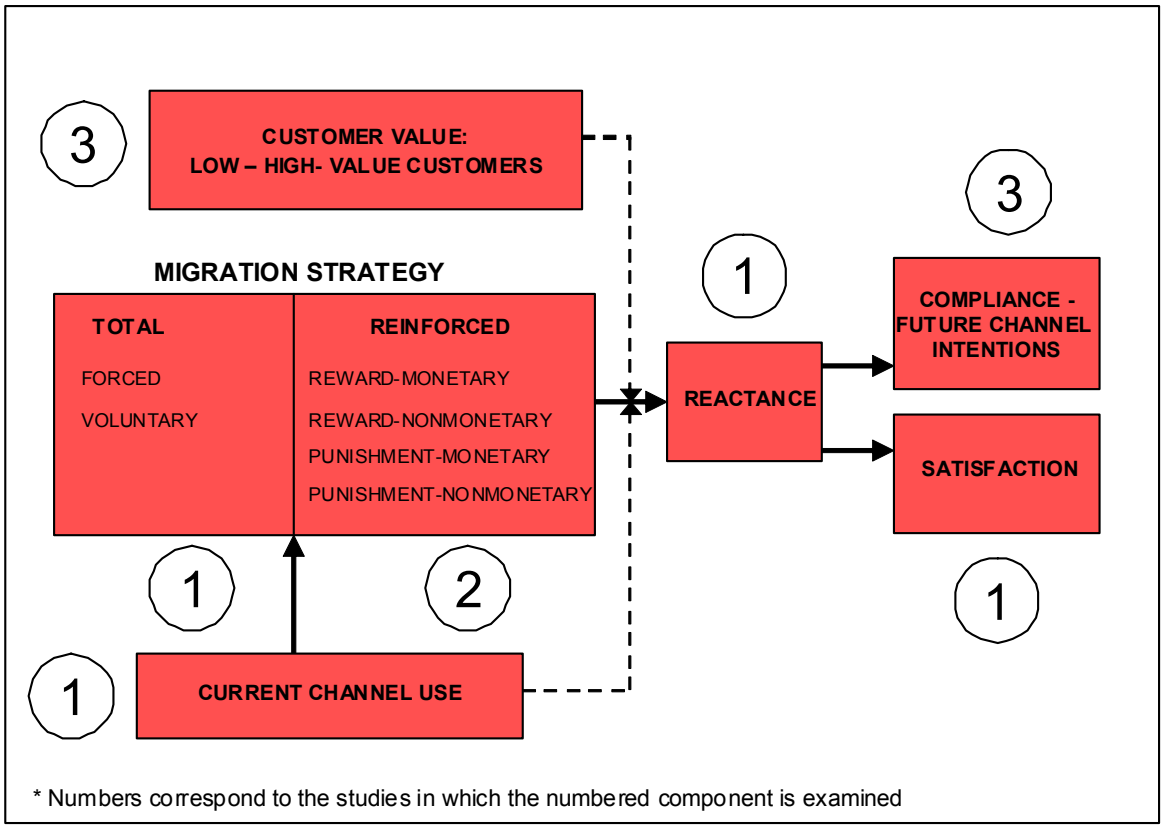


Figure 3.1: Forced Migration: Conceptual Model

3.3 Study 1: Forced Migration and Customer Reactance

3.3.1 Customer Reactance

Eliminating a transaction channel represents a strong barrier to customers' freedom of choice, because they can no longer use that channel. According to reactance literature, such barriers prompt reactance in proportion to their strength (Brehm et al. 1966; Clee and Wicklund 1980). Several studies focus on people's individual psychological reaction to threats to their freedom of choice, adopting marketing (Barnett et al. 2008; Botti et al. 2008; Fitzsimons 2000; Venkatesan 1966), organizational behavior (Zhang and Fitzsimons 1999) and psychological (Crawford et al. 2002) perspectives. Consumers exhibit psychological reactance when their freedom to choose is threatened (Fitzsimons and Lehmann 2004), adopt more favorable attitudes toward the lost choice options (Mazis, Settle, and Leslie 1973; Venkatesan 1966), and tend to exhibit reactive behavior rather than compliance to avoid greater anticipated future regret (Crawford et al. 2002). Thus, empirical evidence implies a relationship between threats to freedom of choice and reactance.

H_1: Forced migration leads to a higher level of customer reactance than does voluntary channel migration.

3.3.2 Customer Satisfaction

In comparison with lost choice options or limited choice conditions, freedom of choice and personal choices encourage positive consequences, such as greater task enjoyment, higher outcome evaluations, and satisfaction (Taylor and Brown 1988). In a health services context, patients who can choose their own physicians express higher satisfaction than do those assigned to physicians (Amyx and Bristow 2001). Conversely, coercive influence strategies lead to tension, frustration, and dissatisfaction, because these strategies constrain customers'

decision autonomy (Geyskens, Steenkamp, and Kumar 1999). Therefore, forced channel migration, compared with voluntary migration, should decrease customer satisfaction.[11]

Reactance also might have a mediating effect on customer compliance (Dowd 1991; Fitzsimons and Lehmann 2004; Jahn and Lichstein 1980; Tracey, Ellickson, and Sherry 1989). However, no marketing research focuses on the potential mediating role of customer satisfaction. Fitzsimons (2000) suggests that reactance leads to customer dissatisfaction in the context of stockout announcements, and Zhang and Fitzsimons (1999) report that limited choice options minimize choice process satisfaction. Yet neither study considers reactance as a potential mediator of the impact of coercion on satisfaction. We posit just such a mediating role in the relationship between forced channel migration and customer satisfaction.

> H_2: Forced migration leads to a lower level of customer satisfaction than does voluntary migration, and this relationship is mediated by customer reactance.

3.3.3 Effect of Current Channel Use

Current channel usage behavior should have a moderating effect on the relationship between a forced migration strategy and its outcomes, as indicated by recent research that shows nearly 50% of customers who are steered to an online channel represent forced users or convinced non-users, who express an ongoing negative attitude toward the imposed channel (NSS Research 2006). Samuelson and Zeckhouser (1988) show that people tend to prefer a previously chosen option over new ones because of their status quo bias. Similarly, Muthukrishnan (1995) finds that decision ambiguity creates an advantage for the incumbent, which might apply to decision processes regarding new brands, stores, and channels. Furthermore Falk et al. (2007) find that the satisfaction with offline channel creates a

[11] We also have empirical data about the impact of a forced migration strategy on customer retention. Because the link between customer satisfaction and customer retention has been documented extensively (Gupta and Zeithaml 2006; Szymanski and Henard 1999), we do not discuss customer retention in our research.

dissynergy and enhances the perceived risk of online channel. That is, customers who have used an incumbent channel and confront a forced migration to a new channel likely experience more reactance and less satisfaction than those who can choose among the channels. The potential negative effect of forced channel migration appears less clear for customers who already use the new channel: A forced strategy might not affect their reactance and satisfaction levels, because they already behave in accordance with the firm's preferences. However, the mere act of requiring specific behavior that previously had been voluntary may induce reactance and decrease satisfaction (Chernev 2003; Mazis, Settle, and Leslie 1973). Therefore, we posit that a forced migration strategy leads to reactance and satisfaction even among those customers who already use the firm's preferred channel, though the effect should be lesser than it is for customers using a different channel.

> H_3: Customers who use the incumbent (conventional) channel exhibit (a) more reactance and (b) lower satisfaction to a forced channel migration strategy than customers who already use the induced or firm-preferred channel.

3.3.4 Design and Measures

We randomly assigned the sample of 117 undergraduate students from the Netherlands (51 women, 66 men; mean age = 23 years, standard deviation [SD] = 2.01) to a condition in the 2 (migration strategy: voluntary versus forced) × 2 (current channel: mail versus Internet) between-participants design. These participants received a booklet that contained all the materials and measures. On the first page, the instructions asked them to imagine a scenario in which they were customers of AGO Energy, the (fictitious) energy company that delivers gas and electricity in their town. Despite increasing competition among energy companies in their region, they still preferred to obtain gas and electricity from AGO because they have not encountered any serious problems with its products and services, and AGO is a large and well-established company that has been operating in the energy business for many years.

Participants then received information about AGO's meter-reading procedure, an obligatory procedure that provides the energy company with information about their energy usage. On the basis of this information, the energy company would estimate their monthly average energy usage for the upcoming year, such that their energy bills fit their prior year's usage. Mail has been the only means for customers to send their meter readings to AGO.

Participants in the mail condition then read: "For a number of years, you have fulfilled this procedure as explained above. Each year you receive a meter-reading card, read the meters, fill in the consumption information on your meter-reading card and submit it to AGO Energy by mail (for free). You are very much used to the procedure which includes reading the meters, filling-in the forms and sending the information to the company by mail. So far you have not encountered any problem regarding this procedure. You are planning to submit your meter-readings by using mail for the next years." In contrast, participants in the Internet condition read: "For a number of years, you have fulfilled this procedure as explained above. However, last year while surfing on the internet, you learned from the website of AGO that you can submit meter-reading information also via internet. Since then you have started to submit your yearly meter-reading by using the web site of AGO Energy. You consider this a new opportunity for sending your meter-readings. So far you have not encountered any problem regarding this internet-based meter-reading submission. You are planning to submit your meter-readings online for the next years."

Next, participants imagined that they received a letter from AGO, which appeared on the penultimate page of the booklet. In the voluntary migration condition, the letter stated that henceforth, AGO was offering its customers the opportunity to submit their meter readings online and provided an address to link to AGO Energy's (fictitious) Web site. This letter also stressed that customers could still use regular mail to submit their readings. In the forced

migration condition however, the letter indicated that customers could only submit their meter readings online, not using regular mail.

3.3.5 Measures

After reading one of the four scenarios, participants completed a reactance measure (Cronbach's $\alpha = .97$) that represents an extended version of Hong and Faedda's (1996) scale. Sample items include, "The letter from AGO Energy made me feel annoyed," "I feel like acting against AGO Energy," and "The letter from AGO Energy gave me a negative feeling." Participants rated their agreement with 12 statements on a seven-point scale (1 = strongly disagree, 7 = strongly agree). Next, they rated their satisfaction with AGO Energy by completing five bipolar scales: unfavorable–favorable, unpleasant–pleasant, negative–positive, unsatisfied–satisfied, and fair–unfair (Oliver 1980; Verhoef, Antonides, and de Hoog 2004; Cronbach's $\alpha = .95$). Finally, participants answered some background questions.

3.3.6 Results

Customer reactance. A two-way analysis of variance (ANOVA) of the effect of migration strategy (voluntary versus forced)[12] × current channel use (mail versus Internet) on customer reactance reveals a significant main effect of migration strategy on customer reactance ($F(1, 113) = 281.89$, $p < .001$), such that reactance is stronger when the channel migration is forced ($M = 4.82$, $SD = 1.12$) than when it is voluntary ($M = 1.92$, $SD = .80$), in support of H_1. We find no significant main effect of current channel use ($F < 1$, ns). However thee is a significant interaction effect of migration strategy and current channel use ($F(1, 113) = 8.86$, $p < .01$), in support of H_{3a}. According to this interaction, customers who currently use regular mail report higher levels of reactance when they are forced to switch to the online

[12] We incorporate a manipulation check directly into the study design to examine whether customers feel forced when they read the letter. The checks reveal that customers in the forced group indicate significantly higher such feelings ($p < .001$) than do those in the voluntary group: $M = 5.68$, $SD = 1.54$; $M = 2.22$, $SD = 1.28$, respectively.

channel (M = 5.15, SD = 1.14) than when they believe this switch is voluntary (M = 1.72, SD = .86; F(1, 113) = 187.57, $p < .001$). Also it appears that a forced strategy increases reactance even among existing online channel users. That is, customers who already use the online channel report more reactance when the company indicates it is the only available channel (M = 4.49, SD = 1.02) than when the company calls the online submission voluntary (M = 2.10, SD = .71; F(1, 113) = 99.53, $p < .001$). As we summarize in Figure 3.2, these results show that firms likely face more customer reactance if they use a forced strategy to steer customers to a new channel, even among customers that already use the new channel.

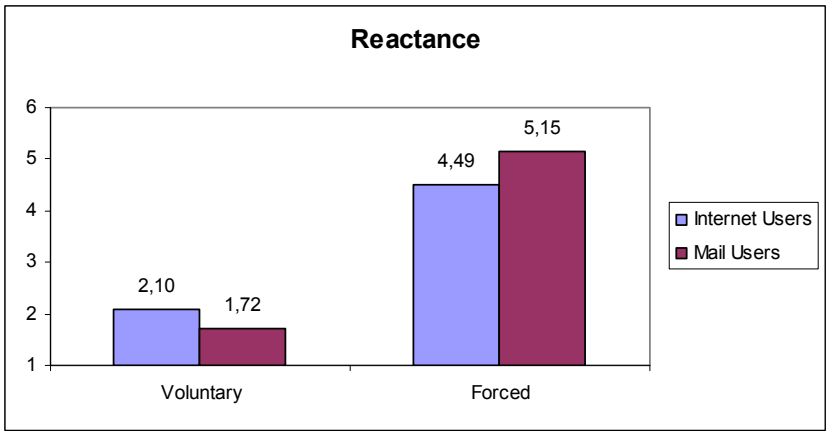


Figure 3.2: Study 1: Effect of Migration Strategy on Customer Reactance

Customer satisfaction. The ANOVA of migration motivation (voluntary versus forced) × current channel use (mail versus Internet) on customer satisfaction reveals a main effect of migration strategy (F(1, 113) = 49.10, $p < .001$), in support of H_2. Customer satisfaction decreases in response to forced channel migration (M = 3.95, SD = 1.25) compared with voluntary migration (M = 5.41 SD = 1.04). However, we find no significant main effect of

current channel use or an interaction effect (Fs < 2.5, ns) on customer satisfaction, so our results do not support H_{3b}, as we show in Figure 3.3.

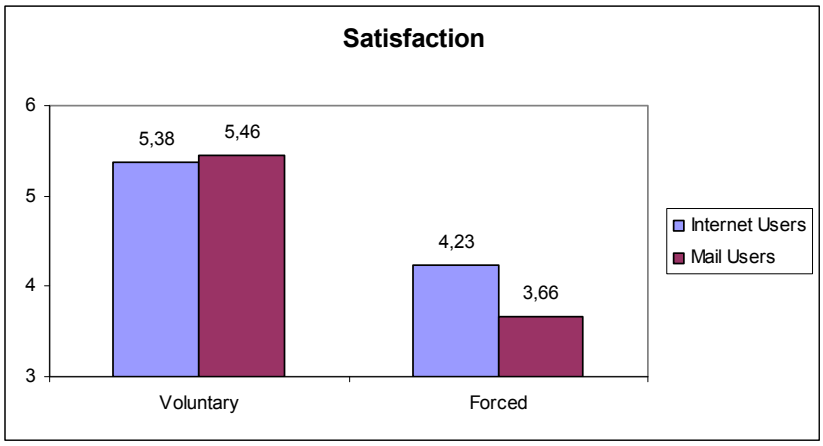


Figure 3.3: Study 1: Effect of Migration Strategy on Satisfaction

Mediations. Finally, we consider whether the impact of migration strategy on customer satisfaction may be mediated by customer reactance. Using Baron and Kenny's (1981) four-step procedure to test mediation, we find that reactance fully mediates the effect of migration strategy on customer satisfaction, in support of H_2. First, we find a significant impact of migration strategy on customer reactance ($F(1, 113) = 262.16$, $p < .001$). Second, our results reveal a significant and direct effect of migration strategy on customer satisfaction. Third, if we use customer reactance as the only explanatory variable in our model, we find a significant and direct effect of reactance on customer satisfaction ($F(1, 113) = 3.92$, $p < .001$). Fourth, if we use reactance and migration strategy together, we find that reactance has a significant effect on satisfaction ($F(1, 113) = 2.34$, $p = .001$), whereas the impact of migration strategy on customer satisfaction vanishes.

3.3.7 Discussion

The results from Study 1 suggest that forced, as opposed to voluntary, channel migration increases customer reactance and decreases customer satisfaction. Customer reactance even occurs among customers who already use the firm's preferred channel. These respondents apparently experience reactance solely as a reaction to the forced migration strategy and its limitations on their freedom. Moreover, reactance mediates the effect of the channel migration strategy on customer satisfaction and channel switching.

3.4 Study 2: Reinforced Migration To Mitigate the Undesired Consequences Of Forced Channel Migration

By using selective incentive programs, such as rewards or punishments (Myers, Pickersgill, and van Metre 2004), instead of just eliminating channels, firms may be able to steer customers to their desired channel(s) while still maintaining customer satisfaction and retention. Therefore, in Study 2, we investigate the use of incentives to mitigate the undesired consequences of forced channel migration.

Incentives can reinforce behavior (Rothschild 1999) through rewards or punishments (Myers, Pickersgill, and van Metre 2004) that may take monetary or nonmonetary forms (Kivetz and Simonson 2002). Rewards distributed to those who cooperate with the firm's wishes include monetary items, such as discounts, gifts, or bonus points, as well as nonmonetary features, such as improved service and prestige (Bhattacharya, Rao, and Glynn 1995; Lund et al. 2002). In contrast, punishments are imposed on those who have not behaved in accordance with the company's strategy and may include monetary damages, such as high fees, or nonmonetary aspects, such as reduced services or longer waiting times (Oliver 1980; Venkatesh, Kohli, and Zaltman 1995). Incentives also may lead to reactance though, because

consumers could perceive them as intended to influence their behavior (Kivetz 2005). We classify various incentive programs in Figure 3.4.

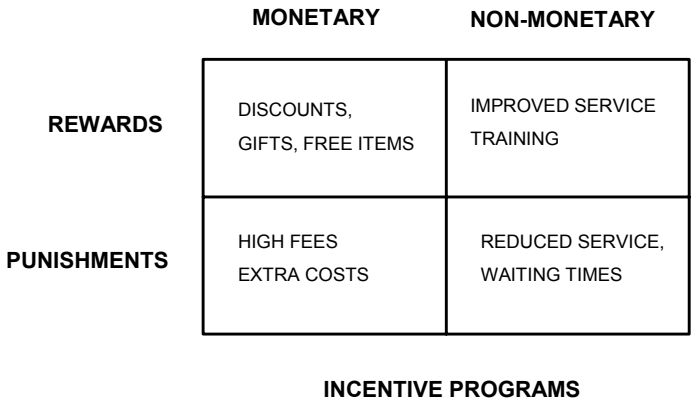


Figure 3.4: Incentive Program Classification

Both rewards and punishments attempt to achieve the same purpose, but they likely differ in the extent to which they succeed in steering customers toward preferred channels. In a channel migration context, rewards are incentives that customers value and receive only when they use the induced channel (Myers, Pickersgill, and van Metre 2004), which should have a positive impact on the firm's influence on customer decisions (DeWulf, Okedekerken-Schroeder, and Iacobucci 2001; Oliver 1980) and be more effective in maintaining and enhancing customer satisfaction than are punishments (Reynolds and Beatty 1999). These effects reflect loss aversion, which states that people tend to respond to losses more extremely than they do to equal-sized gains (Kahneman and Tversky 1979). Punishments also can lead to psychological reactance, because negative incentives make people feel restricted in their freedom of choice (Brehm et al. 1966). However, receiving punishments for using a channel still allows for more freedom than a completely forced channel migration strategy. Finally, previous research reveals that punishments cannot enhance (Bolton and Lemon 1999) and may even harm (Oliver 1980) customer satisfaction.

Monetary rewards influence compliance, decision outcomes, and satisfaction more than do nonmonetary rewards; similarly, monetary punishments are more effective than nonmonetary punishments in generating high compliance, though they also might lead to greater reactance and dissatisfaction (Masclet et al. 2003).

> H_4: Customers confronted with a channel migration strategy exhibit (a) higher reactance and (b) lower satisfaction in response to punishments compared with rewards.
>
> H_5: Customers confronted with a channel migration strategy exhibit (a) lower reactance and (b) higher satisfaction when the strategy uses incentives (rewards and punishments) rather than force alone.[13]

3.4.1 Design and Measures

The sample consists of 129 undergraduate students[14] (56 women, 73 men), with a mean age of 23.2 years (SD = 2.06). They were randomly assigned to one of the conditions in our 2 (mitigation strategy: reward versus punishment) × 2 (incentive type: monetary versus nonmonetary) between-participants design or the hanging control conditions, with a voluntary or forced mitigation strategy. The procedure thus is similar to that in Study 1, with a few exceptions. The letter from AGO Energy explained, in the reward conditions, that if they would submit their meter readings online, participants would receive a one-time €5 discount on their next energy bill (monetary reward) or become a priority customer for AGO Energy's technical service (nonmonetary reward). In the punishment conditions, the letter explained that if participants used the regular mail instead of an online submission, they would have to pay a one-time administrative fee of €5 (monetary punishment) or should expect longer

[13] This relationship should be mediated by customer reactance, as hypothesized in Study 1.
[14] The participant students in Study 2 are different from those students in Study 1. However they are students of the same university and faculty as in Study 1.

waiting times for technical service (nonmonetary punishment).[15] The participants in the voluntary and forced migration control conditions also received letters from AGO, but their letters did not include any information about rewards or punishments. The voluntary versus forced manipulation is the same as that in Study 1. In response to the same questions as detailed for Study 1, the participants provided measures of reactance (Cronbach's $\alpha = .96$) and satisfaction (Cronbach's $\alpha = .92$).

3.4.2 Results

Because the design of Study 2 incorporates a full factorial with two control groups, we adopt the following analytical strategy. We first test for the main and interaction effects in a 2 (reward versus punishment) × 2 (monetary versus nonmonetary) factorial ANOVA, in which we ignore the control conditions. Following Jaccard (1998), we conduct contrast analyses to compare the means across all six conditions.

Customer reactance. The ANOVA reveals a significant main effect of mitigation strategy on customer reactance ($F(1, 86) = 45.33$, $p < .001$), such that customer reactance is stronger to a punishment strategy ($M = 4.58$, $SD = 1.14$) than to a reward ($M = 2.81$, $SD = 1.33$). No significant main effect of incentive type (monetary versus nonmonetary) appears ($F < 1$, ns). Thus, we find support for H_{4a}. Moreover, we identify a marginally significant interaction effect between mitigation strategy and incentive type ($F (1, 86) = 3.58$, $p = .06$); customers who imagine a punishment strategy report higher levels of reactance when the punishment is monetary ($M = 4.75$, $SD = 1.03$) rather than nonmonetary ($M = 4.41$, $SD = 1.23$). Similarly, the respondents report lower reactance after receiving a monetary reward ($M = 2.49$, $SD = 1.29$) compared with a nonmonetary reward ($M = 3.14$, $SD = 1.32$). Thus, the

[15] Customers receive offers of equally sized gains (rewards) and losses (punishments) in both the monetary and nonmonetary incentive conditions. Thus, we can investigate the impact of incentive framing on customers' responses to the reinforced migration strategy.

interaction between mitigation strategy and incentive type is a crossover interaction: In a reward frame, a monetary incentive produces less reactance than a nonmonetary incentive; whereas in a punishment context, the monetary punishment causes more reactance than the nonmonetary punishment. Monetary rewards also lead to significantly lower customer reactance in comparison with monetary punishments ($p < .001$), nonmonetary punishments ($p < .001$), and nonmonetary rewards ($p = .07$). Moreover, monetary punishments ($p < .001$) and nonmonetary punishments ($p < .001$) produce higher reactance than do nonmonetary rewards.

The one-way ANOVA of the six conditions yields a significant effect of condition ($F(1, 129) = 28.65$, $p < .001$). As we show in Figure 3.5, the series of planned comparisons, which test for differences among the six conditions, reveal that forced migration is associated significantly ($p < .001$) with the highest levels of customer reactance (M = 4.82, SD = .94) compared with monetary (M = 2.49, SD = 1.29) and nonmonetary (M = 3.14, SD = 1.32) rewards; customer reactance in response to punishments does not differ significantly from the forced strategy. Therefore, we find support for H_5 with regard to the relative impact of the forced strategy compared with that of rewards.[16] Similarly, voluntary migration invokes the lowest customer reactance (M = 1.82, SD = .61), significantly lower than that prompted by the forced strategy and all incentive strategies (except for monetary rewards). Therefore, when they adopt a forced channel migration strategy, firms should use rewards, which are more effective for lowering reactance than are punishments. Moreover, monetary rewards appear to constitute more useful tools for alleviating customer reactance than are nonmonetary rewards.

[16] Customer reactance to a punishment strategy is as high as that to a totally forced strategy: monetary punishment M = 4.75, SD = 1.03; nonmonetary punishments M = 4.41, SD = 1.23.

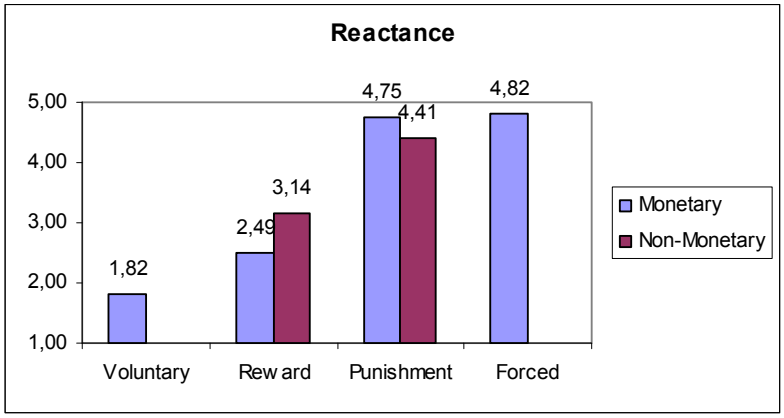


Figure 3.5: Study 2: Effect of Migration Strategy on Customer Reactance

Customer satisfaction. A two-way ANOVA reveals a significant main effect of rewards versus punishments on customer satisfaction ($F(1, 86) = 16.17$, $p < .001$). Customer satisfaction is lower in response to a punishment strategy ($M = 3.94$, $SD = 1.06$) compared with a reward strategy ($M = 4.84$, $SD = 1.00$), in support of H_{4a} (see Figure 3.6). We find no significant main effect of monetary versus nonmonetary incentives ($F (1, 86) = 1,18$, ns) and no interaction effect of [rewards versus punishments] × [monetary versus nonmonetary] ($F (1, 86) = 2.20$, $p < .1$) on customer satisfaction. A contrast analysis reveals that monetary rewards prompt higher customer satisfaction ($M = 5.10$, $SD = .87$) than do monetary ($M = 3.90$, $SD = 1.07$) or nonmonetary ($M = 3.98$, $SD = 1.07$; $p < .001$) punishments or nonmonetary rewards ($M = 4.54$, $SD = 1.08$; $p = .07$). Furthermore, there is no significant difference between monetary and nonmonetary punishments in their impact on customer satisfaction. A one-way ANOVA and contrast analysis of the control conditions—namely, forced and voluntary migration—indicate that the incentives lead to higher satisfaction ($M = 4.39$, $SD = 1.12$) than forced migration ($M = 3.76$, $SD = .96$) but lower satisfaction than voluntary migration ($M = 5.60$, $SD = .60$; $F(1, 129) = 12.96$, $p < .001$), in support of H_5.

Finally, we reexamine the mediating role of customer reactance on satisfaction to validate our findings from Study 1. Similar to our results pertaining to mediation, the results reveal that customer reactance significantly mediates the effect of migration strategies on customer satisfaction, in support of the mediation proposed by H_4 and H_5.

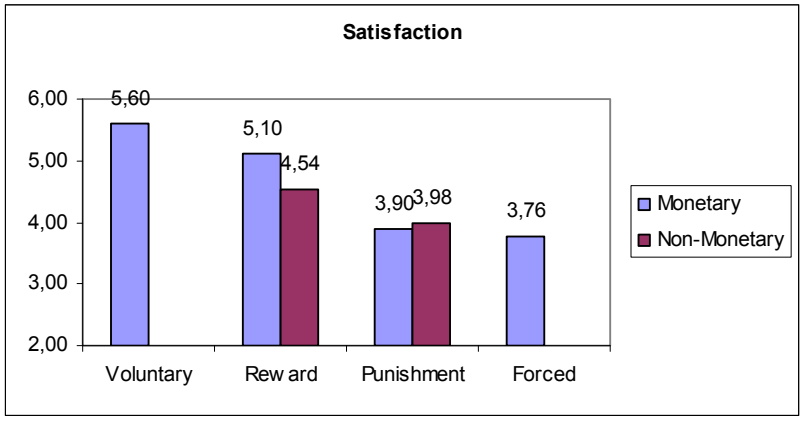


Figure 3.6: Study 2: Effect of Migration Strategy on Satisfaction

3.4.3 Discussion

A migration strategy that gets reinforced through incentives can lower customer reactance and increase customer satisfaction, compared with a totally forced strategy. However, we also find some differences across these incentive programs, probably due to loss aversion responses to different frames of equally sized gains or losses. Specifically, rewards create less reactance and more customer satisfaction than punishments, which implies they are more effective for coping with the negative consequences of a forced migration strategy. Furthermore, monetary incentives have a strong bidirectional effect on customer reactance and satisfaction, depending on whether they serve as rewards or punishments. Monetary incentives increase higher satisfaction and decrease customer reactance compared with nonmonetary incentives when used as rewards.

3.5 Study 3: Field Experiment

3.5.1 Future Channel Usage Intentions (Compliance)

A channel migration strategy aims to attain positive future channel usage intentions as the final outcome of customer decision processes, or "compliance" in the terminology of reactance literature (Crawford et al. 2002). In forced channel migration, customers have no option other than to use the imposed channel, so channel switching should be inevitable (unless they switch to other companies). Even as they use this forced channel though, customers may retain negative attitudes toward it and a positive attitude toward the unavailable channel. We therefore study their future channel intentions.

As we noted previously, people harbor more favorable attitudes toward lost choice options (Fitzsimons 2000; Mazis, Settle, and Leslie 1973) and tend to prefer previously chosen (Samuelson and Zeckhouser 1988) or incumbent (Muthukrishnan 1995) options to new or alternative alternatives. Mulder (2008) also finds that people disapprove of punishment for noncompliance more than rewards for compliance. Psychological reactance thus likely mediates the relationship between an induced action and the resulting compliance (Dillard and Shen, 2005; Dowd, 1991; Tracey, Ellickson, and Sherry 1989).

> H_6: Forced migration leads to (a) lower future channel usage intentions for the imposed channel and (b) higher future channel usage intentions for the incumbent[17] channel than does voluntary migration, as mediated by customer reactance
>
> H_7: Future channel usage intentions toward the reinforced channel are lower in response to punishment than in response to rewards.

[17] Future usage intentions for the incumbent channel in the forced condition refers to future channel usage intentions for this channel given the customer (again) has the opportunity to use this channel from the company or the usage intention for the same channel from another company.

3.5.2 Differences in Customer Segments

Customer segments respond differently to multichannel strategies (Keen et al. 2004; Konuş, Verhoef, and Neslin 2008, Thomas and Sullivan 2004). Firms frequently distinguish between high- and low-value customers, generally offering the former preferential treatment (Zeithaml, Rust, and Lemon; 2001). Because of the potential negative consequences of forced migration, firms might be more reluctant to force valuable customers to use other channels. But do high- and low-value segments respond differently to a forced channel migration or its accompanying mitigation strategies?

According to fairness theory (Tyler and Lind 1992), they should respond differently to forced migration. Fairness provides an important determinant of human reactions (Bos et al. 2003), such that when people believe they have experienced unfairness, the perception influences their subsequent behavior, reducing their levels of commitment toward the perceived source of that unfairness (Tyler and Lind 1992). Customers' perceptions of fairness help them determine their response to a firm's policies and their resulting satisfaction with the company (Bolton and Lemon 1999; Smith, Bolton, and Wagner 1999). Furthermore, situations of perceived distributional injustice often cause people to feel anger or dislike toward the perceived source of that injustice (Dowd 1975). When people lack sufficient information about outcomes, they use procedural justice and fairness perceptions to assess their results. In this situation, an unexpected outcome may lead to dislike, lower commitment, and negative reactions (Bos et al. 1997).

Customers' perceptions of fairness and procedural and distributive justice relate closely to their perceptions of the value of their relationship with the firm. The more intense the relationship, the more they feel valuable and privileged (Boland, Morrison, and O'Neill

2002). Moreover, because of their preferential treatment, high-value customers often are aware of their importance to firms, which causes them to expect high service levels and fair treatment. According to distributive justice theory, a person in an exchange relationship expects the net rewards to be proportional to the individual investments in the relationship (Homans 1961). In situations of perceived distributional injustice, customers likely exhibit greater psychological reactance (Dowd 1975), which could harm their satisfaction (Smith, Bolton, and Wagner 1999). Similarly, customer reactance may emerge if no information exists about how other customers are treated (Bos et al. 1997). Wangenheim and Bayon (2007) report that high-value customers may react to forced actions even more negatively than low-value customers, because they perceive negative outcomes as more critical. In summary, fairness theory implies that high-value customers react more negatively (i.e., higher reactance, lower satisfaction) than low-value customers to a forced channel migration strategy.

However, the opposite effect also might exist. High-value customers tend to feel more loyal to the firm (Verhoef, Franses and Hoekstra 2002), which means their relationships are more forgiving and robust to potentially negative outcomes of managerial strategies (Shankar, Smith, and Rangaswamy 2004; Smith and Gupta 2002; Wallace, Geise, and Johnson 2004). From a multichannel management point of view, high-value customers typically have greater familiarity with the company than do low-value customers, which enables them to use the different channels more effectively (Rangaswamy and Van Bruggen 2005).

This discussion suggests two opposite reactions to a forced channel migration by high- versus low-value customers. Theoretical grounding of fairness theory is strong, but sufficient empirical evidence leads us to expect lower reactance and higher satisfaction among high-value customers. Therefore, we do not formulate hypotheses about the effect of customer value on reactance and satisfaction but rather examine its impact in an exploratory approach.

3.5.3 Design and Measures

MetrixLab Online Market Research collected the data from its online panel consist of Dutch customers. Of the 499 respondents who took part in the study, 254 were women and 255 men. Their mean age was 48 years (SD = 14.05). We assigned these participants randomly to one of four conditions (voluntary, forced, reward, punishment). Because we also include customer value, we calculated an index based on relationship length (years as a customer), relationship width (number of products used), and monthly (average) payment to the energy company. High-value customers use more than two products from their energy company, have a relationship of longer than three years, and pay more than €150 per month for their energy consumption.[18] Therefore, we used a 4 (migration strategy: voluntary, forced, monetary reward, monetary punishment) × 2 (customer value: high versus low value) between-participants design. We included only monetary rewards and punishments in the main analytical procedure, because we already conducted an exploratory analysis with respect to monetary and nonmonetary incentives in Study 2.

The materials and measures are similar to those of Study 2, except that before participants read the scenarios, they completed measures of customer value related to their actual energy company, then imagined the scenarios as if the letter came from their actual energy company. After they read the letter, the respondents completed the questions from Studies 1 and 2, including the measures of reactance (Cronbach's $\alpha = .95$) and satisfaction (Cronbach's $\alpha = .98$).

[18] As an additional examination, we determine if customers perceive themselves as high-value in their relationships with their energy providers. Customers whom we identify as high-value on the basis of their relational intensity also consider themselves significantly more valuable than their low-value counterparts. On a seven-point agreement scale, high-value customers respond to the control item "I feel myself as a valuable customer of X-company" with higher means (M = 4.80, SD = 1.45) than low-value customers (M = 4.32, SD = 1.47; $p < .05$).

This study provides no informational transparency, so respondents do not know if other customers have received the same letter. Thus, our setting better reflects a real-world situation in which customers does not know others' outcomes. Finally, to measure channel usage intentions, we asked participants to indicate how likely they were to use the Internet or mail channel in the future (if they had the opportunity) on a seven-point scale (1 = very unlikely, 7 = very likely).

3.5.4 Results

Reactance, satisfaction, and customer value. A 4 (migration strategy: voluntary, forced, reward, punishment) × 2 (customer value: high versus low) ANOVA shows a significant main effect of migration strategy on customer reactance ($F(1, 339) = 64.38$, $p < .001$), in line with the findings from Studies 1 and 2 (see Figure 3.7). That is, reactance is stronger to forced channel migration (M = 4.47, SD = 1.39). Similarly, customers exhibit the lowest reactance in response to the voluntary migration (M = 2.21, SD = 1.09) and reward (M = 2.64, SD = 1.13) strategies but the greatest reactance to the punishment strategy (M = 4.40, SD = 1.43). Thus, we validate our support for H_1, H_4, and H_5 with regard to customer reactance and migration strategies among actual customers.[19]

We find no significant main effect of customer value ($F < 1$, ns) on reactance but a significant interaction effect of migration strategy and customer value ($F(1, 339) = 2.40$, $p < .01$). The interaction indicates that reactance varies between high- and low-value customers, but this variation depends on the migration strategy the firm uses. Contrast analyses suggest

[19] For an additional analysis, we examined monetary and nonmonetary incentives (rewards and punishments) and find a significant main effect ($F (1, 331) = 4.43$, $p < .05$) and an interaction effect of reward × monetary ($F (1, 331) = 21.48$, $p < .001$) on customer reactance. For satisfaction, we also find a significant interaction effect of reward × monetary ($F (1, 331) = 17.03$, $p < .001$). Monetary rewards lead to lower reactance (M = 2.64, SD = 1.12) and higher satisfaction (M = 5.39, SD = 1.29), whereas monetary punishments cause higher reactance (M = 4.50, SD = 1.43) and lower satisfaction (M = 3.51, SD = 1.67) compared with these results for nonmonetary rewards and punishments.

that high- and low-value customers differ in their reactance levels only in response to incentives. That is, after being told they will receive a monetary reward for their channel switch, high-value customers exhibit significantly higher psychological reactance (M = 3.04, SD = 1.20) than do low-value customers (M = 2.49, SD = 1.07; $p < .05$). Offering a monetary punishment creates higher levels of reactance among high-value customers (M = 4.90, SD = 1.41) than among low-value ones (M = 4.29, SD = 1.41; $p < .1$). However, there is no significant variation in their reactance in a forced channel migration situation (high-value M = 4.18, SD = 1.42; low-value M = 4.57, SD = 1.37). Similarly, customers do not differ in their levels of reactance when confronted with a voluntary channel migration strategy (high-value M = 2.28, SD = 1.01; low-value M = 2.16, SD = 1.14). We display these results in Figure 3.7.

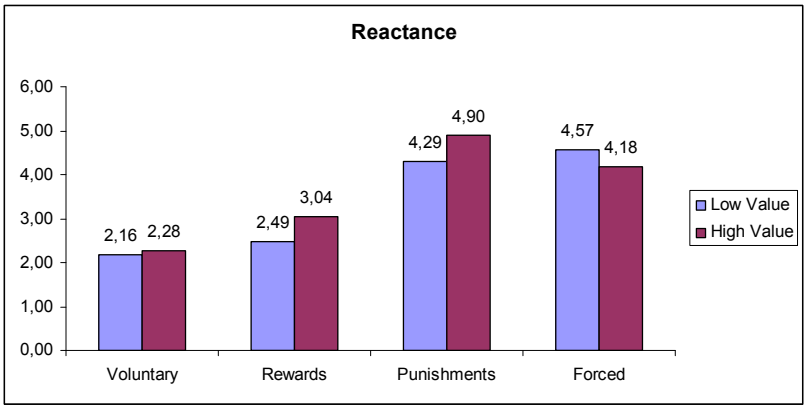


Figure 3.7: Study 3: Effect of Migration Strategy and Customer Value on Reactance

We find a significant main effect of migration strategy on customer satisfaction ($F(1, 339) = 41.36$, $p < .001$), which decreases in response to a forced strategy (M = 3.63, SD = 1.71) and sinks even lower in the punishment (M = 3.50, SD = 1.67) condition compared with the reward (M = 5.39, SD = 1.29) or voluntary (M = 5.65, SD = 1.16) scenarios. A contrast analysis reveals that customer satisfaction after a voluntary migration strategy is significantly

higher than after a forced strategy ($p < .001$) or a punishment strategy ($p < .001$), but we find no significant difference between voluntary and reward strategies with respect to customer satisfaction (p = ns). Nor do we find significant variation between the forced and punishment strategies (p = ns), though customer satisfaction is significantly higher in response to a reward strategy compared with a forced migration strategy ($p < .001$). Thus, our Study 3 results validate our support for H_2, H_4, and H_5 from Studies 1 and 2.

We find no significant main effect of customer value (F (1, 339) = 1,61, *ns*) or interaction effect of migration strategy and customer value (F (1, 339) = 1.34, $p < .1$) on satisfaction. In other words, there is no significant difference between low- and high-value customers in terms of their satisfaction in response to various channel migration strategies.

Customer reactance fully mediates the relationship between migration strategy and customer satisfaction, according to the significant and direct impact of migration strategy on reactance ($F(1, 339) = 75.16$, $p < .001$), significant direct effect of migration strategy on customer satisfaction ($F(1, 339) = 49.05$, $p < .001$), and significant direct effect of reactance on customer satisfaction ($F(1, 339) = 17.46$, $p < .001$). Finally, we discover a significant direct effect of reactance on satisfaction, but the impact of migration strategy on customer satisfaction ($F(1, 339) = 8.64$, $p < .001$) vanishes when we include both migration strategy and customer reactance as explanatory variables in our model. These results support and validate our previously formulated hypothesis regarding the mediating role of customer reactance on customer satisfaction.

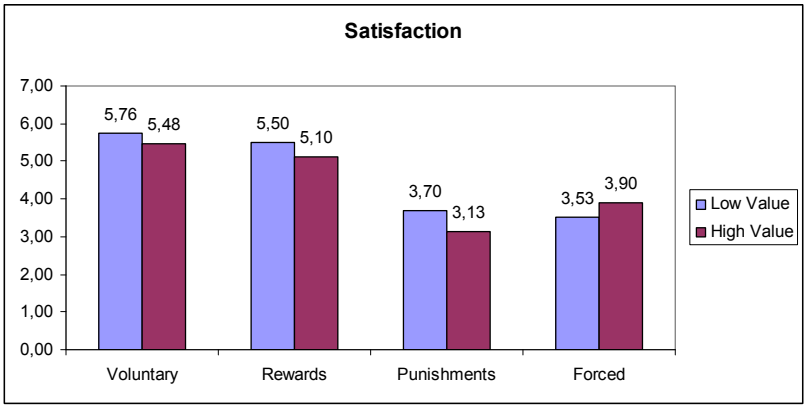


Figure 3.8: Study 3: Effect of Migration Strategy and Customer Value on Satisfaction

Future channel usage intentions. To examine future channel usage intentions, we employ a 4 (migration strategy: voluntary, rewards, punishments, forced) × 2 (customer value: high versus low) ANOVA.

First, the results reveal a significant main effect of migration strategy on the future usage intentions toward the Internet channel ($F(1, 339) = 2.78$, $p < .05$). In line with our expectations, future usage intentions for the Internet (the channel preferred by the firm) is higher among respondents in the voluntary ($M = 6.37$, $SD = .96$) and reward ($M = 6.32$, $SD = 1.00$) conditions than among those forced to migrate ($M = 5.82$, $SD = 1.59$) or punished ($M = 5.94$, $SD = 1.40$). A contrast analysis shows that this difference is significantly higher for the voluntary strategy than for the forced strategy ($p < .001$) and punishment strategy ($p < .05$), though no significant difference occurs between the voluntary and reward strategies (p = ns). As expected, future usage intentions toward the Internet are significantly lower for the forced strategy compared with a reward strategy ($p < .05$), but we find no significant difference between the forced and punishment strategies (p = ns). Future usage intentions also are significantly higher for the reward strategy than for the punishment strategy ($p < .05$). These

results indicate no significant main effect of customer value on future channel usage intentions toward the Internet ($F(1, 339) = 1.39$, p = ns), as well as no significant interaction effect of migration strategy × customer value ($F(1, 339) = .44$, p = ns). We uncover no mediating effect of customer reactance and no direct or significant impact of customer reactance on future usage intentions ($F(1, 339) = 1.10$, p = ns). Second, we find no significant impact of the migration strategy on future channel usage intentions toward the mail channel ($F(1, 339) = 1.72$, p = ns). Regarding customer value, our results suggest no significant main effect on future channel usage intentions ($F(1, 339) = .20$, p = ns). We also find no significant interaction effect of migration strategy × customer value ($F(1, 339) = .83$, p = ns).

In conclusion, our analysis supports H_6 and H_7 because future usage intentions toward the Internet channel differ significantly for respondents in the voluntary, forced, reward, and punishment strategies. However, migration strategy and customer value do not interact to predict future usage, so we can not support H_{6b}. We provide these results in Figure 3.9.

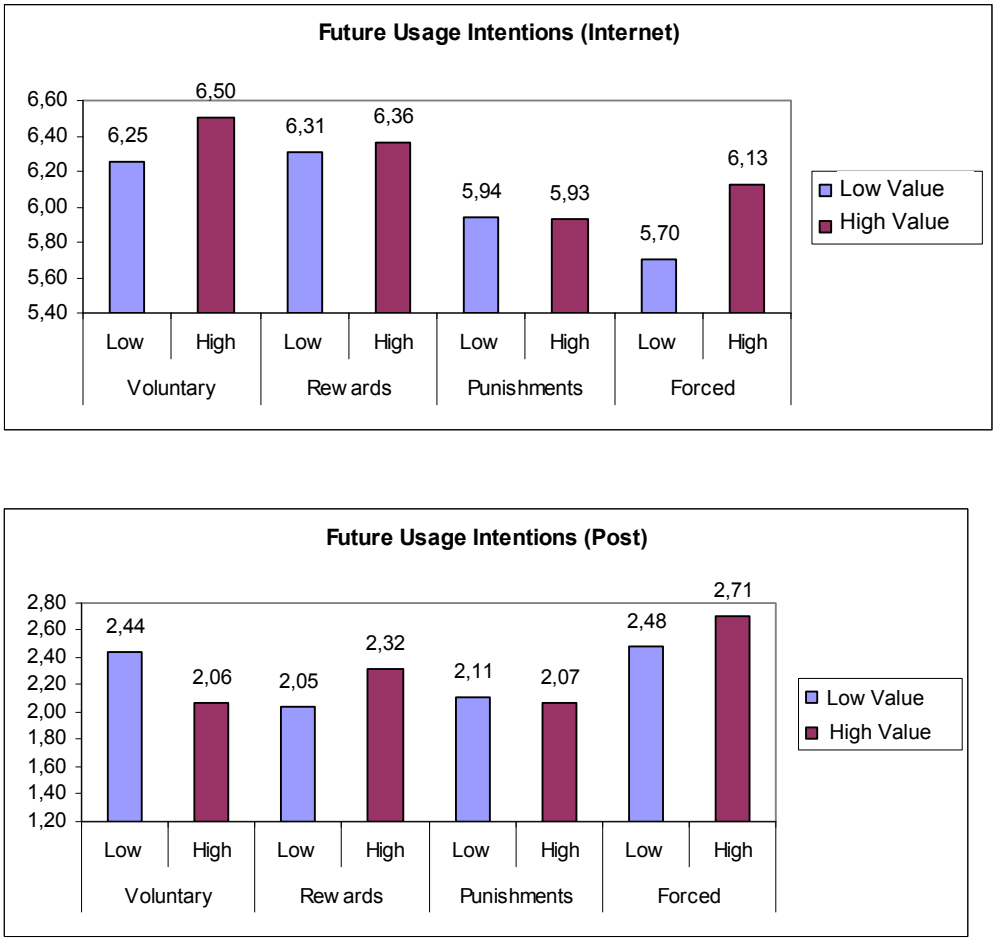


Figure 3.9: Effect of Migration Strategy and Customer Value on Future Channel Use Intentions

3.6 General Discussion

3.6 .1 Findings

In this contribution to existing literature on multichannel customer management (Neslin et al. 2006), we focus on customer reactions to a forced channel migration. Our experiments—one with consumers from a panel of marketing research aganecy and two with students (who are also consumers) —investigate the consequences of forced migration, including both attitudinal reactions and compliance with the goal of the migration strategy.

The central variable in our study, customer reactance, has received somewhat limited attention in marketing literature (e.g., Barnett et al. 2008; Botti et al. 2008; Fitzsimons 2000; Fitzsimons and Lehmann 2004; Zhang and Fitzsimons 1999). In all three studies, forcing customers into another channel leads to customer reactance, which affects customer satisfaction. We also provide evidence that customer reactance fully mediates the relationship between forced migration and satisfaction. Prior studies have not indicated this mediating role of reactance in situations in which freedom of choice for consumers is limited. We consider this finding an important theoretical contribution to studies on customer reactance. Prior research that investigates, for example, forcing customers to use self-service technologies excludes this variable and instead links the enforcement strategy to firm attitudes (e.g., Reinders, Dabholkar, and Frambach 2008). The link to satisfaction in our study is important, because dissatisfied customers tend to defect. Furthermore, our findings emphasize the importance of customer reactance by showing that it occurs not just among the users of an incumbent channel but also among those who already are using the new channel, though to a lesser extent. However, we note that the Internet users in our study recently switched and had not been using this channel as long as the others had been using the mail channel, which might affect their reactance to a forced channel migration strategy. Theoretically, the mere act of forcing customers appears to threaten their sense of freedom, even if they already are in compliance. Forced migration to a particular channel negatively affects not only nonusers but also users of the channel.

An incentive-based, reinforced channel migration strategy might offer an alternative that can alleviate the negative consequences of forced migration. Monetary rewards largely solve the channel migration problem, minimizing the reactance scores so that they are statistically the same as those to voluntary channel migration. Punishments do not quite alleviate the problem though; the reactance scores for the two punishment conditions are

almost as high as those for forced migration. These differences reflect the concepts of prospect theory (Kahneman and Tversky 1979).

Monetary rewards lead to less reactance than nonmonetary rewards, but nonmonetary punishments provoke less reactance than monetary ones. The monetary nature of a reward may make its value more salient, whereas the opposite is true for monetary punishments. Several studies indicate monetary gains and losses produce more utilitarian perceptions than do nonmonetary gains and losses (Chandon, Wansink, and Laurent 2000) and influence behavior more (Hopkins and Gullickson 1992; Kennely and Fantino 2007). However, our study is the first to address this bidirectional effect of monetary incentives with respect to nonmonetary incentives.

Prior research also mainly studies attitudinal effects (e.g., Brown et al. 2002; Reinders, Dabholkar, and Frambach 2008) and ignores compliance. Using future channel intentions as a measure of compliance, we find that voluntary strategies and (monetary) rewards create more compliance than (monetary) punishments and forced migration strategies. Thus, rewards clearly are more effective than punishments in this multichannel context.

Finally, we investigate differences in responses to a forced channel migration between high- and low-value customers. In contrast with prior research though (Wangenheim and Bayon 2007), we find no strong differences between these segments, though they respond differently to the mitigation strategies. Reactance is higher among high-value customers to monetary rewards and punishments, perhaps because their monetary nature makes the customer value to the firm more salient. Thus, these customers believe they should be treated according to their value. The absence of a moderating effect also may indicate that high-value customers feel more committed to the firm, which makes them more forgiving. From a channel perspective, they also might be more experienced using alternative channels (Kumar and Venkatesan 2005). These explanations seem to contradict fairness theory, which leads to

our null effect finding. More research is required to solve this issue, including more in-depth investigations of high- and low-value customers.

This study thereby contributes to several literature streams. First, we investigate responses to a forced migration strategy. Second, we convincingly demonstrate that customer reactance represents a key response to firm-induced strategies that limit consumer choice, in which realm we emphasize its mediating effect on satisfaction. Third, we find support for a moderating effect of channel usage on consumer responses to forced migration. Fourth, we show that the channel migration strategy influences future usage intentions and consumer compliance with the channel preferred by the firm. Fifth, we indicate that rewards may function as a mitigation strategy. Sixth and finally, we reveal responses to a forced migration strategy do not vary significantly between high- and low-value customers.

3.6.2 Managerial Implications

In recent years, firm-driven channel migration strategies appear more common, because a multiple channel strategy is not always cost effective or sustainable for a company as compared to a single channel strategy. Our research provides several important implications in this context. First, multiple channel managers should recognize that a forced channel migration strategy likely will have negative consequences on customer satisfaction, even among customers already using the new channel. Thus, when implementing a channel migration strategy, firms must consider how to mitigate such negative consequences. Second, rewards provide an effective mitigation strategy and encourage customer channel switching. Therefore, firms should steer their customers to their preferred channels by giving rewards to those who use it rather than simply by blocking customer access to conventional channels. Third, firms should be careful before they use punishments to alter customer behavior; carrots

are more effective than sticks. Fourth, though forcing high-value customers into a new channel can destroy value, we show that high-value customers do not exhibit more severe reactions than low-value customers. Therefore, though firms should always be careful when implementing a forced strategy, they do not need to be more careful with high-value customers in particular.

3.6.3 Research Limitations and Further Research

Certain limitations characterize this research. We do not use actual behavioral data pertaining to the consequences of forced channel migration strategy, and our experiments focus on one specific setting. However, in an unreported experiment, we considered the audio market and find very similar results. Still, the outcomes of our research might be context dependent, so further research should extend the study of forced migration to other markets and channels. We use satisfaction, measured after the firm applies its migration strategy, but satisfaction might differ if measured after customers use the new channel. The results also might differ depending on whether customers find the Internet channel easier to use or encounter problems. Therefore, we encourage researchers to use actual customer responses to forced channel migration. Finally, additional research might investigate subsequent and actual behavior, such as purchase rates, sales, and churn.

Beyond these extensions, this research suggests some fruitful research directions. More research could investigate the different responses of high- versus low-value customer segments toward forced channel migration strategies to untangle the opposing processes that may explain our finding of no strong differences. Additional studies also could extend our knowledge on reactance, such as whether feelings of reactance persist over time and have enduring effects on customer–firm relationships.

Appendix 3.1

Scale Items

Psychological Reactance Scale (Hong and Faedda 1996)

strongly disagree 1 2 3 4 5 6 7 strongly agree

1. The letter from AGO Energy gave me a negative feeling.
2. I feel that my freedom to choose a channel for meter-reading is threatened.
3. The letter from AGO Energy makes me feel rebellious.
4. I feel like acting against the wishes of AGO Energy.
5. I feel that I am forced to use the internet for meter-reading in the future.
6. I believe I can choose between multiple channels for meter-reading.
7. The letter from AGO Energy made me feel annoyed.
8. I feel that the letter from AGO Energy forces me into a specific behavior.
9. I feel that that I have sufficient freedom in choosing a channel for meter-reading.
10. The letter from AGO Energy made me feel angry.
11. The letter from AGO Energy made me feel irritated.
12. I feel that I am free to choose between using the mail and the internet for meter-reading.

4. The Effect of Channel Elimination on Customer Behavior: Transition from Catalog Retailers to E-Tailers

4.1 Introduction

Firms consistently attempt to introduce new channels to customers, which makes their use of multiple channels ever more prominent. Several research studies investigate the introduction of new channels and the effects on customer metrics (Ansari, Mela, and Neslin 2008; Boehm and Gensler 2006; Deleersnyder et al. 2002). But in addition to these frequent, well-studied channel introductions, retailers also eliminate existing and unprofitable channels and withdraw marketing efforts through them. For example, the Discovery Channel's retail arm closed its mall-based and stand-alone stores but increased its e-commerce presence (Dilworth 2007). The European low-fare airline Ryanair announced it would close all its airport check-in desks by October 2010, forcing passengers to use its online check-in service (McNamara 2009). From 2008 to 2009, the number of industry catalogs available only online increased from 1868 to 2011, while print-only formats decreased from 1574 to 1347 (National Directory of Catalogs 2009). Yet no empirical research pertains to the elimination of channels by firms and its potential impacts on customer behavior and metrics.

Neslin and Shankar (2008) argue that eliminating a channel may turn off customers because it forces them to use a different channel, contrary to their preferences. Some prior studies also show that forced channel migration leads to negative customer attitudes, including reactance, dissatisfaction, and decreased future usage intentions (Konuş, Trampe,

and Verhoef 2009; Reinders, Dabholkar, and Frambach 2008). These studies offer insights into the potential consequences of channel elimination but remain experimental and cannot confirm the actual impact of channel elimination on customer behavior. Therefore, we explicitly consider the consequences of channel elimination on customer behavior.

To do so, we choose the remote shopping industry, which recently has revealed a drastic transformation from catalog-based to online e-tailing. Through this transformation, the industry has introduced new and alternative channels while also eliminating some conventional and less effective channels (Diakova 2005; Venkatesh 2005). In this context, we investigate the effect of the elimination of the print catalog channel on customer purchase behavior through the following research questions:

- Does the elimination of print catalogs has an impact on sales of a company in the remaining purchase channels (i.e., the Internet and telephone)?
- Which factors influence customer responses to channel elimination?
- How do past customer behavior and customer characteristics affect customer responses to a channel elimination?
- Can marketing (e-mail) communications influence customer responses to channel elimination?
- What are the short- and long-term effects of channel elimination on customer purchase; that is, does its impact diminish or increase over time?

Accordingly, the main objectives of our research are as follows: First, we assess the impact of the elimination of catalog channel on purchasing probability and average order size (per channel and aggregate). Second, we examine the factors that might influence customer responses to channel elimination, such as past customer behavior and customer characteristics, e-mail communications, and time-based effects.

In pursuing these objectives, we make several contributions to extant literature. Our research is the first to investigate the effect of channel elimination on customer behavior. Because our data include both experimental and control groups of customers of a catalog retailer, we examine comparative customer responses to channel elimination. We also develop a framework that incorporates past customer behavior, demographics, e-mail communications, and time trends. Finally, our research enhances knowledge about catalog retailing and multichannel marketing. For example, catalogs remain integral to the remote shopping industry, so when retailers eliminate them, purchases in online and offline channels decline. Our results suggest this negative effect tends to decrease over time though, and e-mail communications can help alleviate such negative consequences.

We proceed as follows: We present a literature review of some trends in catalog retailing, potential consequences of channel elimination, and factors that might affect customer responses to catalog elimination. This yields our framework for examining the impact of channel elimination on sales. We present this framework and then advance hypotheses suggested by the framework. Then, we describe our data and the variables that we employ to examine the consequences of channel elimination. After we present our empirical model and report our empirical results, we end with some conclusions, managerial implications, limitations, and issues for further research.

4.2 Literature Review

4.2.1 The Emergence of the Multichannel Environment

Taking a customer management perspective, Neslin et al. (2006, p. 96) define a channel as "a customer contact point, a medium through which the firm and the customer interact" Blattberg, Kim, and Neslin (2008, p. 636) cite several forces that have contributed

to a proliferation of channels in recent years. These forces include: enhanced technological capabilities, customer demand, competitive innovation in channel usage, and the promise that a multichannel strategy will help the firm win customers and increase sales and profits.

All these forces came into play for example when in the mid-1990s, an entirely new form of channel emerged – the Internet. But the movement to multichannel was more than just Internet adoption. Yes, the heretofore single-channel catalog company added the Internet, but also added the bricks-and-mortar store. Examples include Lands End, LL Bean, and Eddie Bauer. Companies in the insurance agency found themselves marketing not only through agents, but through the Internet as well as call centers. Traditional bricks-and-mortar retail stores ranging from Best Buy to Bloomingdales added the Internet as well as catalogs to the repertoire of channels through which they could interact with customers.

4.2.2 Customer Behavior in a Multichannel Environment

Several research studies have focused on how customers make choices in this new multichannel environment. These studies often focus on channel choice (Kumar and Venkatesan 2005; Kushwaha and Shankar 2008; Montoya-Weiss, Voss, and Grewal 2003), multichannel customer segmentation (Konuş, Verhoef, and Neslin 2008), and channel migration behavior (Ansari, Mela, and Neslin 2008; Gensler, Dekimpe, and Skiera 2004; Knox 2005; Thomas and Sullivan 2005a).

A key development in this research stream was the recognition that customers may wish to use different channels for different stages of their decision process, particularly for search and purchase (Neslin et al 2006; Blattberg, Kim, and Neslin (2008, pp. 637-638). This gave rise, for example, to the "research shopping phenomenon", whereby customers would search for information on channel A yet purchase on channel B (Verhoef, Neslin, and

Vroomen 2007). For example, Verhoef et al. found that Internet search followed by retail store purchase was the most common form of research shopping, although other forms such as searching using a catalog yet buying on the Internet were also important. The key point is that customers prefer to use different channels for different stages of their decision process.

In addition to channel availability and stage of the decision process, research has identified several additional influencers of customer channel decisions, including: customer transactional history (Ansari, Mela, and Neslin 2008; Fader, Hardie, and Lee 2005), current channel use (Gensler et al. 2006; Konus, Trampe, and Verhoef 2009), e.g., many customers are inertial in their channel choices (Ansari, Mela, and Neslin 2008), demographic characteristics (Kushwaha and Shankar 2008; Strebel, Erdem, and Swait 2004 and marketing communications (Ansari, Mela, and Neslin 2008; Thomas and Sullivan 2005b). Moreover, customer responses may vary over time as they become acquainted with and adopt new channels (Deleersnyder et al. 2002; Venkatesan, Kumar, and Ravishanker 2007). Valentini, Neslin, and Montaguti (2009) found, for example, that the customer choice process for purchase channels evolves over time from the moment customers are acquired, moving from an inertial-based, marketing responsive process to one governed more by well-established channel preferences and less influenced by marketing.

4.2.3 The Recent Impetus for Eliminating Channels

In the midst of an environment of channel proliferation, other businesses are pursuing an alternative approach, namely, "less channeling." As customers adapt to newer channels and increasingly use online channels for the various phases of the shopping process (Jupiter Research 2006), companies find the idea of eliminating costly channels such as catalogs appealing, even if some customers still use them. The presence of customers who continue to

prefer conventional channels for their information search and purchase and the potential savings related to eliminating such channels creates a question about whether their elimination might lead to negative firm consequences (Diakova 2005).

Neslin and Shankar (2008) emphasize that multichannel customer management requires not just the introduction of new channels (multichanneling) but also the elimination of ineffective and costly channels (less channeling). Previous research reveals that a multichannel strategy offers several positive consequences; multichannel consumers represent an increasingly large proportion of consumers (Rangaswamy and van Bruggen 2005; Verhoef, Neslin, and Vroomen 2007) and tend to transact at higher volumes (Blattberg, Kim, and Neslin 2008; Neslin et al. 2006). More than 80% of retailers prefer to sell through two or more channels (Direct Marketing Association 2005). Yet the redundant use of multiple channels carries certain risks, such as channel cannibalization (Deleersnyder et al. 2002; Pauwels and Neslin 2008; Wolk and Skiera 2009), cross-channel conflicts (Falk et al., 2007), and poor returns on the investment (Stone, Hobbs, and Khaleeli 2002; Neslin et al. 2006). For example, Chu, Chintagunta, and Vilcassim (2007) found in an equilibrium price analysis that Dell benefited from exiting the retail channel in 1994. Moreover, the use of several costly channels might have negative consequences (Diakova 2005). The catalog retailing industry offers a good context for investigating the consequences of less channeling and channel elimination, especially during its recent transition toward e-tailing. This transition could induce widespread elimination of catalog channels (Diakova 2005; Venkatesh 2005).

Several factors suggest the demise of print catalogs. First, shipping print catalogs demands significant expenditures (Vovici EFM Research 2008). Second, print catalogs no longer function as a primary purchase channel; mail order sales have declined drastically in recent years in both absolute value and percentage (Diakova 2005). At the same time, Internet sales are gaining ground against other remote shopping channels (U.S. Census Bureau 2004).

Print catalogs served as the main consumer information search channel for years. But the e-commerce boom has increased the prominence of Web catalogs, pushing retailers to shift their focus to e-tailing and online shopping (National Directory of Catalogs 2009). Remote shopping companies persist in an ongoing debate about whether it continues to be profitable to ship print catalogs to customers who can, and increasingly do, access online information channels (Diakova 2005).

Yet evidence also supports their integral role. More than 65% of online shoppers used print catalogs to search for information (Jandial, Ogawa, and Sekheran, 2005), and 55% of online consumers shop with a catalog in hand (e-Marketer 2004). Furthermore, the shopping motivations induced by catalogs differ from those for online, which implies that consumers perceive different utilities from print catalogs compared with online remote shopping (Eastlick and Feinberg 1999; Vijayasarathy and Jones 2000). Finally, previous research shows that print catalogs play a dual role as both an impetus (Venkatesh 2005) and a purchase driver for the online channel (Diakova 2005; Venkatesh 2005). Pauwels and Neslin (2008) find that catalog mailings enhance sales through not only the catalog channel but also online and store channels, in both the short and the long term. Similarly Verhoef, Neslin, and Vroomen (2007) report a strong cross-channel synergy between catalog search and Internet purchases.

4.3 Framework

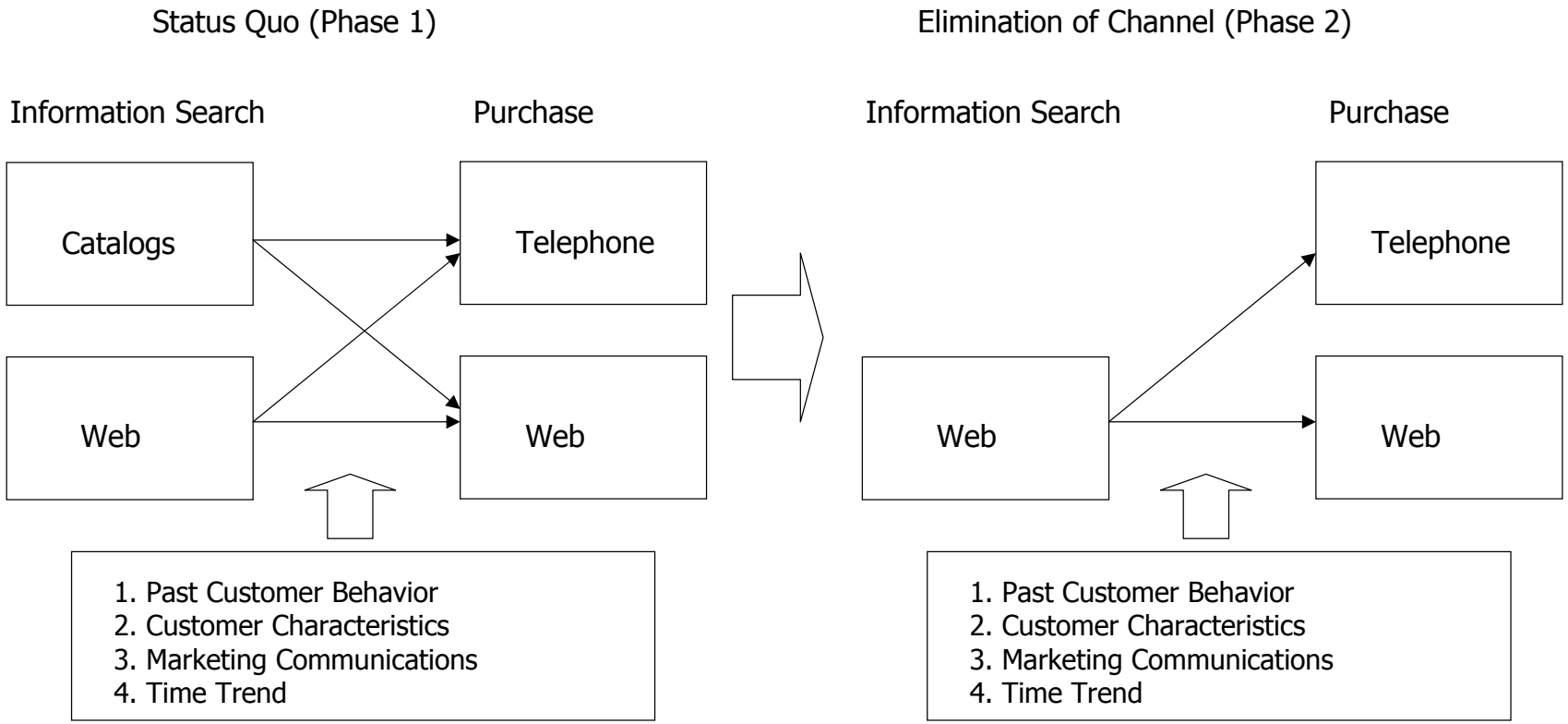
The above discussion on customer behavior in a multichannel environment suggests the framework for our research, which we depict in Figure 4.1. The framework is also adapted from the work of Neslin et al. (2006) and Blattberg, Kim, and Neslin (2008, p. 637). The framework has two key features: (1) Customers use different channels for different stages of their decision process, particularly search and purchase, and (2) the transition from

channel use in the search stage to the purchase stage is moderated by past customer behavior, customer characteristics, marketing communications, and trend. These features are well-established by the literature reviewed earlier.

We specify the framework as it will apply to the particular application we will examine, where the firm initially uses catalogs and web for its search channels, and telephone call center and web for its purchase channels. The case we will examine is the elimination of catalogs as a search channel, i.e., the firm is considering fully eliminating its print catalogs. In the more general case, there could be several channels used for each stage, the firm could be considering eliminating purchase as well as search channels,

Figure 4.1

Research Framework



4.4 Hypotheses

The most immediate question is what will be the impact of eliminating the catalog on sales. Noting the previous work that has shown the impact of research shopping and the importance of using channels to move customers through search and purchase, it seems clear that eliminating the catalog should have a deleterious effect on sales. We therefore hypothesize:

H1: Eliminating the catalog search channel will decrease firm sales.

From a customer management perspective, sales are generated by purchase incidence and order size. In other words sales are related to the extebt how often the customer purchases from the firm, and the average order size when the customer does purchase. Since we have hypothesized that eliminating the catalog channel should decrease sales, the question is, whether this will be through lower purchase incidence, order sizes, or both. Theory does not suggest a clear answer here, but we note two studies have found that in a multichannel environment, purchase incidence appears to be more malleable than order sizes (Ansari, Mela, and Neslin 2008; Pauwels and Neslin 2008). Ansari, Mela and Neslin found that marketing had a significant impact on purchase incidence but not on purchase quantity. Pauwels and Neslin found that the *addition* of a channel grew sales by increasing purchase incidence without an impact on order size. A *post hoc* explanation for these results could be that marketing and more channels increase the number of customer "touches", and more touches leads to more incidence. Order size is not influenced because once the customer is buying from the firm, he or she buys what's needed, and that does not change. Accordingly, we advance the following:

H2: Eliminating the catalog search channel will decrease purchase incidence but will have no impact on order size.

Our framework contains four moderators of the translation from search to purchase. We now advance hypotheses with respect to the impact of each one when we eliminate the catalog channel.

Past Customer Behavior. Purchase history influences future purchasing behavior (Gupta and Zeithaml 2006), such that people tend to purchase more when they have been more active in their purchasing (Fader, Hardie, and Lee 2005). As Verhoef and colleagues (2002) show, customers with a long-lasting prior relationship also tend to feel more loyal to the firm. These long-lasting, intense relationships inure consumers to the negative outcomes of firm strategies (see Shankar, Smith, and Rangaswamy 2003; Smith and Gupta 2002; Wallace, Giese, and Johnson 2004) in terms of their purchase frequency. Therefore, frequent buyers should be less affected by the elimination of the catalog channel, in terms of the total number of items they purchase (before and during the observation period) and the start date of their relationship with the retailer. We therefore advance the following hypothesis:

> H3: Eliminating the catalog search channel will not decrease sales as much among customers who have purchased from the firm frequently in the past or have had a longer relationship with the company.

Channel Use. Another aspect of past customer behavior is customers' historical usage of channels. The average multichannel customer buys more and is more valuable to the firm than is a single channel customer (Ansari, Mela, and Neslin 2008; Kumar and Venkatesan 2005; Kushwaha and Shankar 2007; Neslin et al. 2006). For example, Boehm (2008) reveals a strong positive impact of Internet use on customer retention, and Harris and colleagues (2006) show that an unexpected change in service delivery has less impact on online customers. Verhoef, Neslin, and Vroomen (2007) also emphasize the impact of channel lock-in and cross-channel synergies on search and purchase behaviors in various channels, with a particularly high cross-channel synergy between catalog search and Internet purchase. That is,

customers who have not used the Internet (purchase) will not be affected by cross-channel synergy if the catalog (search) channel gets eliminated. Therefore we expect the following:

H4: Eliminating the catalog search channel will have less impact on customers who historically have tended to use the Internet.

Customer Demographics. Vast empirical evidence confirms that demographics influence customers' channel preferences for information search and purchase (Ansari, Mela, and Neslin 2008; Bhatnagar and Ghose 2004a, 2004b; Inman, Shankar, and Ferraro 2004; Kushwaha and Shankar 2008; Strebel, Erdem, and Swait 2004). Strebel, Erdem, and Swait (2004) and Lin and Ding (2006) both indicate that gender could moderate the extent of participation in online activities, and Garbarino and Strahilevitz (2004) find that women are less interested in the e-commerce than are men for shopping activities. Therefore, we expect that male customers will be less affected by the absence of a catalog channel. Morris and Venkatesh (2000) also emphasize that older customers "will likely take refuge in methods that are unfamiliar." Therefore, the elimination of the catalog channel should have a stronger negative effect on purchases among older compared with younger customers. In summary, we have the following:

H5a: Eliminating the catalog search channel will have less impact on men.

H5b: Eliminating the catalog search channel will have less impact on younger customers.

Marketing (E-Mail) Communications. Marketing communications influence customer purchase and channel preferences (Knox 2005; Kumar and Venkatesan 2005; Thomas and Sullivan 2004b). In the context of catalog retailing for example, customers might receive e-mail communications and then may respond to them. E-mail communications have a positive impact on customer acquisition, profitability (Reinartz, Thomas, and Kumar 2005), and

loyalty (Merisava and Raulas 2004) and could partially replace catalogs sent to customers. Moreover, the more regular transmission of inexpensive e-mail communications establishes frequent contacts between customers and the firm. Therefore, we hypothesize:

H6: Email communications should partially alleviate the negative impact on sales of eliminating the catalog search channel.

Time Trends. Previous research recommends acknowledging the time-based effects of marketing policy changes (Ansari, Mela, and Neslin 2008; Erdem and Keane 1996), as well as consumer learning (Mittal, Kumar, and Tsiros 1999; Wood 2001) and the adoption of new channels (Black et al. 2002). In a different settting, Sloot, Fok, and Verhoef (2006) reveal that retail assortment reductions have a negative impact on sales in the short run, whereas this negative effect diminishes slowly in the long run. Accordingly, we hypothesize:

H7: The negative impact of eliminating the catalog search channel should diminish over time.

Table 4.1 is provided to summarize the seven hypotheses we test in this research.

Table 4.1

Expected Effects of Different Factors

Hypothesis	Statement	Result
H1	Eliminating the catalog search channel decreases sales	Confirmed
H2	Eliminating the catalog search channel will decrease purchase incidence but have no impact on order size	Confirmed
H3a,b	Eliminating the catalog search channel will not decrease sales as much among customers who have purchased from the firm frequently in the past	Not Confirmed
	Eliminating the catalog search channel will not decrease sales as much among customers who have a longer relationship with the firm.	
H4	Eliminating the catalog search channel will have less impact on customers who historically have tended to use the Internet.	Confirmed
H5a	Eliminating the catalog search channel will have less impact on men.	Not Confirmed
H5b	Eliminating the catalog search channel will have less impact on younger customers.	Not Confirmed
H6	Email communications should partially alleviate the negative impact on sales of eliminating the catalog search channel.	Confirmed
H7	The negative impact of eliminating the catalog search channel should diminish over time.	Confirmed

4.5 Data

Our data come from a large Dutch catalog retailer that sells a variety of household and personal products through the Internet and telephone channels. The company started as a mail-order catalog retailer that communicated about its products through its print catalog, sent twice a year to households listed in the customer database. Products could be purchased by telephone and mail channels. However, as mail orders vanished, the Internet and telephone became the two main purchase channels. The retailer still sends print catalogs to households in its database twice a year but does not know the net impact of these communications on

customer purchases. The experimental study therefore created two groups: an experimental group of 25,000 customers who stopped receiving the print catalog and a control group who kept receiving the catalog. The experimental design mirrors our framework in Figure 4.1.

From June 2005 to September 2006, all households received print catalogs, but after September 2006, those customers in the experimentation group no longer received them, whereas customers in the control group continued to get them in the mail. The data set includes 50,000 customers (25,000 experimental and 25,000 control), though for our analysis, we draw a random sample of 1000 customers and employ another random sample of 1000 customers for validation purposes. Our data therefore span 50 months of observations, from June 2005 to January 2009, and consist of customer purchases during that observation period, including information about their purchase behavior,[20] customer demographics, channel use, and marketing communication. These data show that 55.2% of the customers use multiple channels (Internet and telephone) for their purchases, whereas 25.0% only use the Internet channel, and 19.8% only use the telephone channel for purchases.

We match initial data from this company's database with the background variables and marketing communications data by using the customer and transaction identifiers. Our data come from customer purchases, collected on a daily basis. We aggregate these daily purchases to a monthly level to enable a panel data analysis. After we obtain these unbalanced monthly panel data, we transform and reshape them into balanced panel data. Furthermore, we have access to transactional information (purchase incidence and amount), as well as past customer behavior, channel use, customer demographics, e-mail communications, and time effects.

Channel Elimination. Our study setting features two phases: (1) the control phase, during which all customers regularly receive print catalogs from the retailer, and (2) the

[20] To retain our focus on factual transactions, we include only invoiced orders and exclude unrealized purchases (e.g., restitution, non-delivered orders) from the database.

experimentation phase, after the elimination of the catalog channel. We also consider two groups of customers: (1) the control group who receive catalogs during the both phases and (2) the experimentation group who only receive catalogs during the control phase. Our core variable, channel elimination (CE), occurs when customers in the experimentation group face the experimentation phase (P2). We then examine the direct effect of CE on customer responses, as well as its interactions with other variables.

Past Customer Behavior. To capture experience effects, we use both time-variant and time-invariant customer behavior variables. The former address the experience effects that customers undergo during the control and experimentation periods, whereas the latter account for other relational information derived from the customers' prior relational history. We capture customer purchase activity during the observation period as the number of items ($NOItem_t$) purchased during the observation period. This variable gets updated over time with each new purchase. Because two customers might have similar purchasing patterns during the observation period but buy varying amounts over their entire relational history, we measure the total number of items (NTItem) purchased over their relational history. Finally, we calculate relationship length as the time elapsed since the customer first entered the database (Bolton 1998), or RLength.

Channel Usage. We capture channel usage effects with CusTel and CusWeb, variables that indicate whether the customer uses the telephone or online channels, respectively, to purchase during the observation period.

Customer Demographics. We have information about respondents' age (Age) and gender (Gen).

E-Mail Communications. Our data consist of two groups of customers who receive and do not receive e-mail communications from the retailer. We therefore use a dummy

variable (MarCom), which equals to 1 if customers receive e-mail marketing communications and 0 if they do not receive any marketing e-mails from the company. For customers who do not receive catalogs, e-mails remain their only form of communication, because they get no print catalogs during the experimentation period.

Time Effects. We include a monthly trend variable in our panel data (Time).

4.6 Analysis Model

We focus on the impact of eliminating the catalog channel (for information search) on sales through telephone and Web channels (see Figure 4.1). To examine this relationship, we decompose sales into purchasing probability and average order size per month and per channel. In turn, we model purchase incidence and average purchase size per month. Following Ansari, Mela, and Neslin (2008), we assume that each customer decides each month whether to purchase and, if so, how much to spend. Specifically, we use a Tobit Type-II model specification, where we use a Probit model for purchase incidence and a regression model for order size.

In our research our analysis will be done at the aggregate level and and as well as the channel model. That is, we consider three models to examine the effect of the channel elimination on purchase incidence and average order size per month:

- M1, pooled model: Estimated to understand the overall effect of channel elimination on customer behavior pooled over channels. In other words, this model includes the purchases from both internet and and telephone purchase channels.

- M2, telephone channel model: Impact of catalog channel elimination on purchase behavior in the telephone channel.
- M3, online channel model: Impact of catalog channel elimination on purchase behavior in the online channel.

For each model, p_{it} is an indicator variable of whether customer decides to purchase or not in the time period *t*. We let q_{it} equal the sales volume of purchases (in euros) made by customer *i* in month *t*, conditional on a purchase occurring, and therefore, that $p_{it} = 1$. Defining the Tobit II model, p_{it}^* represents a latent variable related to the customer's decision to purchase, and q_{it}^* is a partial latent variable related to the observed order size and conditional on the purchase decision. The Tobit II model therefore can be written as follows:

$$(1)\ p_{it} = \begin{cases} \text{Purchase if } p_{it}^* > 0, \text{ and} \\ \text{No Purchase if } p_{it}^* \le 0, \end{cases}$$

where

$$(2)\ p_{it}^* = \alpha_i H_{it} + \varepsilon_{it},$$

for which the vector H_{it} contains both time-variant and time-invariant explanatory variables of the decision to purchase, the parameter α_i refers to the individual-specific effects (heterogeneity), and ε_{it} with a standart normal distribution, captures the unobserved affects that could affect purchase incidence (decision) for time t. Furthermore,

$$(3) \quad \begin{cases} q_{it} = q_{it}^{*} \text{ if } p_{it}^{*} > 0, \text{ and} \\ \text{unobserved if } p_{it}^{*} \leq 0, \end{cases}$$

where

$$(4) \quad q_{it}^{*} = \beta_i G_{it} + \eta_{it},$$

for which the vector G_{it} contains time-variant and time-invariant explanatory variables of the average order size (in €), β_i refers to individual-specific effects (heterogeneity), and normally distributed error term η_{it} captures unobserved affects in this model that could influence the average expenditures at time t.

Both H_{it} and G_{it} contain the same explanatory variables in both stages (purchase incidence and average order size) of the Type-II Tobit model. We represent channel elimination with a dummy variable equal to 1 for customers who receive no catalogs and 0 for customers who receive them. The vectors H_{it} and G_{it} are specified as:

$$(5) \quad H_{it} = h(CE_i, PCB_{it}, D_i, M_i, T_{it}, CE_i xPCB_{it}, CE_i xD_i, CE_i xM_i, CE_i xT_i), \text{ and}$$

$$(6) \quad G_{it} = g(CE_i, PCB_{it}, D_i, M_i, T_{it}, CE_i xPCB_{it}, CE_i xD_i, CE_i xM_i, CE_i xT_i),$$

where

CE_i = channel elimination (of catalog search channel),

PCB_{it} = past customer behavior (number of items purchased, relationship length),

D_i = customer demographics,

M_i = marketing (e-mail) communications, and

T_{it} = time trend effect

Next, in Table 4.2 we incorporate a correlation matrix to demonstrate the correlations of the explanatory variables in our model. It indicates no severe multicollinearity problems among our variables (see Table 4.2). The highest correlations observed occur between CE and time (0.489), which is to be expected since the channel elimination condition occurred later in our time series, and between NOItem and relationship length (0.610), which also makes sense because these are both measures of customer loyalty to the firm.

Table 4.2

Correlation Matrix (Explanatory Variables)

	Channel Elimination	Time	NTItem	Customer (Telephone)	Customer (Web)	NOItem	Relation. Length	Age	Gender	E-Mail Comm.
Channel Elimination	1.000									
Time	.489	1.000								
NTItem (Number of Purchases)	.139	.258	1.000							
CusTel (Telephone Customer)	-.005	.000	.099	1.000						
CusWeb (Web Customer)	-.003	.000	.181	-.287	1.000					
NOItem (Purch. History/ Loyalty)	-.018	.000	.282	.234	.034	1.000				
RLength (Relationship Length)	-.004	.000	.027	.107	-.099	.610	1.000			
Age	-.010	.000	-.048	.061	-.128	.233	.372	1.000		
Gender	.011	.000	-.039	-.047	-.035	-.082	-.012	-.032	1.000	
MarCom (E-Mail Communications)	-.001	.000	-.045	.075	-.284	-.117	.002	.011	-.022	1.000

4.7 Estimation Results

Next we compare model alternatives with fixed effects, random intercept and random parameters for the explanatory variables and interactions for M1, M2 and M3. Greene (2002) notes that random parameter models are more elaborate model specifications; we use them to glean rich panel data, such as our monthly purchase panel data. The parameters vary over the cross-sectional units. To perform this analysis, we use generalized latent linear and mixture models (GLLAMM) as an add-on to STATA.

Before we test the effect of channel elimination and other explanatory variables, we compare the log-likelihood, Akaike information criterion (AIC), and Bayesian information criterion (BIC) values of our three alternative Tobit II models with fixed effects, random intercepts, and random parameters. The comparisons of the three models in Table 4.3 reveal that the random parameter models attain the best model fit for all three models.

Table 4.3
Model Comparison

		Pooled Model (M1)	Telephone Model (M2)	Web Model (M3)
Fixed Effects	LL	-18970.71	-8452.45	-14203.90
	AIC	37981.42	16944.90	28447.80
	BIC	38159.62	17123.12	28626.02
Random Intercept	LL	-18662.04	-8340.07	-13951.78
	AIC	37366.09	16722.14	27945.56
	BIC	37542.30	16898.22	28121.78
Random Parameters	LL	-18439.96	-8292.72	-13747.89
	AIC	36923.94	16625.44	27535.77
	BIC	37119.98	16803.66	27713.99

As we noted previously, we randomly drew a validation sample of 1000 customers and repeated the analysis (also model comparisons) on this sample. This additional analysis produced similar results (significant effects and interactions) as our main data.

4.7.1 Pooled Model (M1)

We provide the parameter estimates for the pooled model in Table 4.4.

Channel Elimination (M1). In the pooled model (M1), we find a significant and strong negative effect of channel elimination on customer purchase incidence ($p = .000$) in our Probit model. Our results reveal no significant effect ($p > .1$) of CE on the monthly average order size (€) though, which suggests that once the customer decides to purchase from the retailer, the elimination of the catalog does not influence the average order size. These results confirm H2. Together, these results (decreased incidence and no impact on quantity) imply lower firm sales, confirming H1.

Past Customer Behavior (M1). The significant effect of the time-variant number of items variable on purchase incidence ($p < .01$) and average order size ($p < .01$) reveals that the more customers make purchases from the retailer and the more active they are, the more they are likely to purchase and the larger their average order size. The time-invariant loyalty measure (NTitem) also has a significant effect on purchase incidence ($p < .01$) and average order size ($p < 0.01$); loyal customers are more likely to purchase and tend to purchase more. We find a negative impact of relationship length on purchase incidence though ($p = .000$), which may be reasonable in the sense that customers who initiated their relationship with the firm many years ago may be inactive or churned customers.

Table 4.4

Parameter Estimates: Pooled Model (M1)

	Purchase Incidence				Average Order Size (Euro)		
	Coefficient	Std. Err.	p	Marginal Ef.	Coefficient	Std. Err.	p
Channel Elimination							
CE	-.778	.189	0.000	-.107	4.180	7.420	0.573
Past Customer Behavior							
$NOItem_t$	.016	.001	0.000	.003	.225	.068	0.001
NTItem	.003	.000	0.000	.001	.041	.015	0.004
Rlength	-.017	.003	0.000	-.003	-.157	.123	0.205
CusTel	.223	.032	0.000	.035	-2.845	1.342	0.034
CusWeb	.255	.037	0.000	.038	-2.579	1.497	0.085
$CE*NOItem_t$	-.007	.000	0.000	-.001	-.104	.043	0.015
CE*NTItem	.002	.000	0.000	-.000	-.023	.018	0.194
CE*RLength	-.008	.005	0.133	-.001	.072	.190	0.704
CE*CusWeb	.467	.072	0.000	.093	-1.748	2.192	0.425
CE*CusTel	-.098	.048	0.043	-.015	1.526	1.964	0.437
Customer Demographics							
Age	-.002	.001	0.081	-.000	.079	.052	0.126
Gen	-.037	.033	0.257	-.006	-4.475	1.281	0.000
CE*Age	.002	.002	0.294	.000	-.118	.086	0.170
CE*Gen	.002	.051	0.970	.000	-.157	2.084	0.940
E-Mail Communications							
MarCom	.137	.027	0.000	-.024	1.225	1.117	0.273
CE*MarCom	.071	.040	0.077	-.012	-1.618	1.673	0.334
Time Effects							
Time	-.018	.001	0.000	-.003	-.020	.059	0.731
CE*Time	.010	.002	0.000	.002	.104	.086	0.225

The results regarding the interactions between channel elimination and transactional variables indicate significant effects for past customer loyalty ($p < .01$). That is, loyal customers are less likely to be influenced by the elimination of the catalog channel. We find a negative and significant interaction effect of the number of items purchased ($p < .01$), which is associated with lower purchase incidence in a channel elimination condition as it increases. The interaction between CE and RLength is not significant in either equation, so H3b is not confirmed, i.e., customers who have been with the firm longer do not appear to be more resilient to the negative impact of channel elimination.

Channel Use (M1). Being a telephone (CusTel) or Web (CusWeb) customer exerts a positive impact on purchase incidence ($p < .01$). We find significant interactions pertaining to channel usage, such that Web customers are less likely to be influenced by CE in terms of their purchase incidence ($p < .01$), whereas telephone customers are more likely to be negatively influenced by channel elimination. These results confirm H4.

Customer Demographics (M1). Age has a negative impact on purchase incidence ($p < .1$); gender has a negative and significant effect on average purchase size ($p < .01$). Younger customers are more likely to purchase, and female customers are more likely to order in greater amounts. With respect to the effects on channel elimination, we observe no significant interactions between demographic characteristics and CE. H5a and H5b therefore are not supported.

E-Mail Communications (M1). E-mail communications exert a positive and significant effect on purchase incidence ($p < .01$) but not on average monthly purchase size. We find a slightly significant and positive interaction between CE and e-mail communications ($p < .1$), which implies that e-mail communications may alleviate the negative effect of the catalog elimination. This supports H6.

Time Effects (M1). We find a significant and negative effect of time trends on purchasing probability ($p < .01$); that is, purchase incidence tends to decrease over time. However, we find no significant trend effects for average order size (€). The interactions between time trends and CE reveal that the negative effect of channel elimination on purchase incidence tends to decrease over time ($p < .01$). After their first recognition of the catalog elimination, customers appear to become accustomed to getting information online and probably start to initiate their shopping process without the help of the catalog. This result supports H7.

4.7.2 Channel-Specific Models: Telephone and Online

The previous section tested our hypotheses about the impact of channel elimination. As an additional exploratory analysis, we estimated the Type II Tobit model for the telephone and web channel separately. We provide the parameter estimates for the separate telephone and online models in Tables 4.5 and 4.6, respectively.

Table 4.5

Parameter Estimates: Telephone Channel (M2)

	Purchase Incidence				Average Order Size (Euro)		
	Coefficient	Std. Err.	P	Marginal Ef.	Coefficient	Std. Err.	p
Channel Elimination							
CE	-.706	.278	0.011	-.027	-5.679	4.661	0.223
Past Customer Behavior							
$NOItem_t$	.006	.001	0.000	.001	.037	.018	0.047
NTItem	.004	.000	0.000	.000	.041	.009	0.000
Rlength	-.014	.004	0.001	-.001	-.147	.072	0.043
CusWeb	-.404	.047	0.000	-.026	-.331	1.042	0.751
$CE*NOItem_t$	-.003	.001	0.009	-.001	-.031	.023	0.184
CE*NTItem	.002	.001	0.010	.001	-.018	.012	0.121
CE*RLength	-.013	.009	0.134	.000	.030	.123	0.805
CE*CusWeb	.209	.083	0.013	.012	-1.479	1.477	0.317
Customer Demographics							
Age	.001	.002	0.484	.000	.082	.054	0.140
Gen	-.104	.047	0.029	-.005	-3.688	.830	0.000
CE*Age	.003	.003	0.378	.000	.001	.050	0.977
CE*Gen	-.146	.074	0.050	-.007	2.048	1.364	0.133
E-Mail Communications							
MarCom	.092	.040	0.022	.004	.352	.686	0.607
CE*MarCom	.003	.070	0.969	.000	-.164	1.100	0.881
Time Effects							
Time	-.021	.001	0.000	-.001	-.049	.033	0.131
CE*Time	.012	.004	0.001	.001	.087	.057	0.124

Table 4.6

Parameter Estimates: Web Channel (M3)

	Purchase Incidence				Average Order Size (Euro)		
	Coefficient	Std. Err.	p	Marginal Ef.	Coefficient	Std. Err.	p
Channel Elimination							
CE	-.332	.190	0.079	-.031	3.365	5.180	0.516
Past Customer Behavior							
$NOItem_t$	.017	.001	0.000	.002	.307	.049	0.000
NTItem	.003	.000	0.000	.001	.026	.010	0.007
Rlength	-.023	.004	0.000	-.002	-.119	.094	0.207
CusTel	-.297	.041	0.000	-.035	-1.953	1.054	0.064
$CE*NOItem_t$	-.008	.001	0.000	-.001	-.137	.031	0.000
CE*NTItem	.001	.000	0.034	.001	-.005	.013	0.717
CE*RLength	-.007	.006	0.212	.000	.075	.147	0.610
CE*CusTel	.159	.052	0.002	.018	-1.008	1.861	0.588
Customer Demographics							
Age	-.009	.002	0.000	-.001	.038	.042	0.364
Gen	-.036	.047	0.443	-.004	-1.023	1.013	0.312
CE*Age	.004	.003	0.114	.000	-.061	.067	0.365
CE*Gen	.015	.061	0.798	.002	-2.096	1.621	0.196
Mail Communications							
MarCom	.393	.037	0.000	.044	1.082	1.028	0.293
CE*MarCom	.046	.045	0.314	.005	-.879	1.290	0.496
Time Effects							
Time	-.012	.001	0.000	-.001	-.083	.031	0.007
CE*Time	.005	.002	0.039	.001	.086	.062	0.171

Channel Elimination (M2-M3). We find a significant and negative effect of CE on purchase incidence for both the telephone and online channels. Therefore, a considerable portion of online purchases appear driven by print catalogs. We do not find a significant effect of CE on the monthly average order size (€), though the absence of the print catalog reduces purchase incidence for both channels.

Past Customer Behavior (M2-M3). The number of items variable is positively associated with purchase incidence for both telephone ($p < .01$) and Web ($p < .01$) purchases, and it has a significant and positive effect on average purchase size for both channels ($p < .05$, $p < .01$, respectively). The coefficient of our time-invariant loyalty measure is positive and significant for both channels: Loyal customers are more likely to purchase (telephone $p < .01$; Web $p < .01$) and tend to purchase in higher volumes (telephone $p < .01$; Web $p < .01$). We find a negative impact of relationship length on purchase incidence ($p < .01$) and average purchase size ($p < .05$) for the telephone channel, whereas the effect is negative only for purchase incidence in the Web channel ($p < .01$) and insignificant for average order size. Customers for whom more time has elapsed since the start of their relationships thus are less likely to purchase and likely to order less through the telephone channel. Regarding the effect of past customer behavior on customer responses to CE, we find a significant interaction with customer loyalty for both channels in the purchase incidence model (telephone $p < .01$; Web $p < .05$). This finding indicates that loyal customers are less affected by the elimination of the catalog channel, though we do not observe such an effect for average purchase size.

Channel Use (M2-M3). We find important cross-channel effects of being a telephone customer on Web purchases and vice versa. That is, being an online customer is associated with a lower likelihood of purchase through the telephone channel ($p < .01$), and being a telephone customer has a negative effect on online purchase incidence ($p < .01$) and average order size ($p < .1$) through the Web channel. We also find positive interaction effects for both

channels that positively influence purchase incidence in the CE condition (M2 CusWeb p = .013; M3 CusTel p = .002). A multichannel customer's use of another purchase channel therefore is less affected by the elimination of the print catalog channel.

Customer Demographics (M2-M3). The significant effect of gender on purchase incidence ($p < .05$) and average order size ($p < .01$) in the telephone channel indicates that women are less likely to purchase through the telephone channel. The age variable has a significant effect on purchase incidence for the Web channel ($p < .01$), such that younger customers are more likely to use it for purchases, though we do not find a direct effect of age on telephone sales ($p > .1$). The interaction effects reveal that female customers tend to be more likely to purchase through the telephone channel in the CE condition ($p < .1$), whereas we find no effect of customer characteristics on customer responses for the online channel.

E-Mail Communications (M2-M3). These communications have a significant and positive direct effect on purchase incidence for purchases through both channels. The direct effect is stronger for Web purchases ($p < .01$) than it is for telephone purchases ($p < .05$) though. In contrast with the pooled model, we find no significant interactions for the two channel models.

Time Effects (M2-M3). Finally, our results reveal a negative and significant time trend effect of the telephone ($p < .01$) and online ($p < .01$) channels on purchase incidence. We observe a negative time trend effect on the average purchase size for purchases made online ($p < .01$). With respect to the time trend effects in the channel elimination condition, we find significant and positive interactions for both channels in our purchase incidence model (telephone $p < .01$; Web $p < .05$).

4.8 General Discussion

4.8.1 Findings

We study the effect of the elimination of a catalog channel on customer purchase behavior by investigating how it affects the purchase incidence and average order size across different retail channels. In so doing, we also assess whether these effects differ across customers or decrease over time.

First, our analysis shows that print catalogs still drive customers to purchase from online and offline channels. The absence of a catalog therefore decreases purchase probability, not only in the telephone channel but online as well. Therefore, despite its consistent informational content and wide availability, the online sales channel still depends considerably on the push created by print catalogs. Their effect on purchase incidence, and particularly online sales, has been the topic of significant discussion (Diakova 2005; Szeto and Jimenez 2005; Venkatesh 2005) but never of empirical research that investigated these effects in an actual setting, as we do.

Second, various factors have an impact on customer responses to the elimination of the catalog channel and therefore are of great importance for the effective implementation of a channel elimination strategy across customer groups. In Table 4.7, we offer a brief overview of our results with regard to the effect of different variables on purchase incidence and average order size.

Table 4.7

Effect of Various Factors on Purchase Incidence and Order Size (Channel Elimination)

	The Effects of Various Factors on Customer Response to Channel Elimination					
	Pooled Model		Telephone Channel		Web Channel	
	Purchase Incidence	Average Order Size	Purchase Incidence	Average Order Size	Purchase Incidence	Average Order Size
Customer Past Behavior						
Purchase History	(-)	(-)	(-)	NS	(-)	(-)
Customer Loyalty	(+)	NS	(+)	NS	(+)	NS
Relationship Length	NS	NS	NS	NS	NS	NS
Channel Use: Telephone	(+)	NS			(+)	NS
Channel Use: Web	(-)	NS	(+)	NS		
Customer Characteristics						
Age	NS	NS	NS	NS	NS	NS
Gender	NS	NS	(+)	NS	NS	NS
Marketing Communications						
E-Mail Communications	(+)	NS	NS	NS	NS	NS
Time Effects						
Time Trend	(+)	NS	(+)	NS	(+)	NS

With respect to customers' past behavior, we find that purchase history and loyalty both influence purchase incidence after a channel elimination. Relational intensity and loyalty invoke greater purchases in both telephone and online purchase channels. With respect to channel usage, we find significant cross-channel effects on purchase incidence; in line with our expectations, multichannel customers purchase more often even after a channel elimination, because they are less affected by the negative consequences of this elimination. However, we find no significant effects of relational factors on average purchase size, nor any impact of channel elimination on this metric.

The positive and significant effect of the use of e-mail communications on purchase incidence matches prior research, which reveals that e-mails prompt the choice of the online purchase channel (Ansari, Mela, and Neslin 2008). In addition to driving purchase incidence, e-mail communications also help maintain customer purchase incidence after the elimination of a print catalog.

The time trend has a significant and positive effect on purchase incidence too, in both the pooled model and the channel-specific models. That is, within a few months of the CE, the decreased purchase incidence starts to increase again, even though the print catalog remains absent. Prior research similarly suggests that customers learn to adapt to alternative channels and acquire the skills to shift over time (Knox 2005). Customers who are deprived of a print catalog will initiate a shopping process and direct themselves to the online channel, eventually, for their information search. However, as a long-term adaptation process, it may take a significant amount of time for customers to adapt fully to a shopping process without print catalogs.

Finally, our results reveal that average order size generally is not affected by the elimination of the catalog channel, whereas purchase incidence is influenced drastically. The

negative impact on purchase incidence thus is not reflected in the average purchase size, assuming the customer initiates a shopping process and makes a decision to purchase. This empirical evidence indicates print catalogs act mainly as a reminder that creates an impetus for purchase decisions but not as singular information search channels. These results build on research in practice (Diakova 2005) that emphasizes the importance of print catalogs, according to their dual function.

4.8.2 Managerial Implications

Our research has several implications for managers. The elimination of costly and ineffective channels have practical benefits in multichannel settings. Yet eliminating the catalog channel has a negative effect on purchase incidence for telephone and online channels, which implies it is not simply a source of extra printing and shipping costs. Customers are accustomed to shopping using catalogs (Diakova 2005), and even with the widespread availability of rich online shopping channels, customers continue to prefer print catalogs to search for information and remind them to initiate a shopping process through any channel. Catalogs are still as an integral part of the remote shopping industry.

Various factors influence customer responses to a channel's elimination, especially past customer behavior and channel usage. Therefore, firms need to develop specific strategies for different customer segments to account for their transactional backgrounds and responses. For example, firms could determine which customers exhibit intense purchasing behaviors after they receive catalogs, then continue to send catalogs to them while eliminating this channel for customers whose purchases show no relation with the timing of the catalogs.

E-mail communications help offset the negative effects of eliminating the catalog channel, so managers clearly should maintain such communications with their customer base .

A positive time trend effect also provides managerial insights, in that firms should engage in heavier communication right after the channel elimination, to mitigate the immediate decrease in purchase incidence. As the negative effect of the elimination diminishes over time and customers adapt to an online shopping process, they can start to reduce this level of communication.

4.8.3 Research Limitations and Further Research

Our research is limited to a specific form of channel elimination, that is, of print catalogs. It has become one of the most common forms of channel elimination in practice, but other forms might extend beyond this setting. For example, companies might eliminate some modern information search channels such as information kiosks or informative call centers or dismantle purchase or after-sales service channels. We strongly encourage researchers to investigate the effects of channel eliminations across different settings to help broaden our understanding of the consequences of channeling activities.

Several factors that might affect customer responses to channel elimination do not appear in this research. For example, the product category might shift customers' purchase incidence during the different phases of the shopping process; some categories should be more influenced by the absence of a catalog (or another) channel. Furthermore, we have no attitudinal or psychographic data regarding customers' attitudes toward certain channels. The consideration of such factors would extend our understanding of the consequences of eliminating a channel, so we encourage researchers to implement new empirical studies that incorporate other covariates that might affect customers' responses to channel elimination.

Finally, clickstream data might reveal whether and how channel elimination influences these patterns. We have access to clickstream data about customers' responses to e-mail

communications, but most CE practices aim to direct customers to the online channel, so it would be worthwhile to focus on the effect on online customer behavior more extensively. The long-term consequences of channel elimination also remain unexplored. We find a time trend effect that minimizes the negative effects of channel elimination on purchase incidence, over a time span of 30 months. However customers' adoption and learning of new channels might take more time, which also could imply that the elimination effect vanishes completely eventually. Additional research should investigate the longer-term CE effects, along with competition effects, such as whether competitors offer the eliminated channel and its potential effect on customer churn and retention.

5. Discussion and Conclusions

5.1 General Introduction

In this chapter, I provide an overview of the studies comprehensively presented in Chapters 2–4, which provides a means to summarize and discuss the main conclusions and managerial implications of the findings of this thesis. I conclude by presenting some limitations that mark this research, as well as some further research directions it suggests.

The main goal of this thesis has been to gain a greater understanding of multichannel customer behavior and how firms can manage their multichannel marketing activities. It consists of three essays pertaining to multichannel customer behavior but involving different aspects of multichannel customer management. The focus in Chapter 2 is on the existence of multichannel shopper segments and the investigation of their covariates, with consideration of multiple phases of shopping and multiple categories. Chapter 3 investigates customer responses to forced channel migration in terms of customer attitudes, including reactance, customer satisfaction, and future usage intentions. Finally, Chapter 4 addresses the effect of channel elimination on customer purchase incidence and average order size, with consideration of various factors that might have an impact on this relationship.

Table 5.1

Summary of Empirical Results

	Chapter 2	Chapter 3	Chapter 4
Title	Multichannel Shopper Segments and Their Covariates	Customer Responses to Forced Channel Migration	The Effect of Channel Elimination on Customer Behavior
Data	Survey data	Survey data	Actual (transactional) data
Methodology	Latent class analysis	Experimentation	Tobit Type II model
Results	1. Three customer segments: a. Multichannel enthusiasts b. Uninvolved shoppers c. Store-oriented customers 2. Psychometric covariates are helpful for predicting segment membership. 3. Multichannel-based consumer segments differ across product categories.	1. Forced channel migration leads to customer reactance and dissatisfaction (customer reactance fully mediates the relationship between migration and satisfaction). 2. Customer reactance also occurs among users of the online channel. 3. A reinforced strategy using rewards (rather than punishments) helps mitigate the negative consequences of forced migration. 4. There are no strong differences between high and low value customers in response to forced migration.	1. The elimination of the print catalog channel has a negative effect on purchase incidence (but no effect on average order size). 2. Print catalogs drive purchases through telephone and online channels. 3. Several factors have an impact on customer responses to channel elimination: a. Past customer behavior (+) b. Multichannel use (+) c. E-mail communications (+) d. Time trend (+)

5.2 Summary of the Findings

Table 5.1 contains an overview of the important results derived from three different empirical studies. Readers should note that I have used different data sources and methodologies to analyze the data in three studies; therefore, the table also provides information on the methodology and the type of data used in each study.

With its focus on multichannel shopper segments and their covariates (see Table 5.1), the research in Chapter 2 identifies three consumer segments. Segment 1 includes multichannel enthusiasts who have positive attitudes toward the use of all channels. The store-focused segment (Segment 3) orients toward stores instead of other channels, whereas the uninvolved shopper segment (Segment 2) is characterized by lesser preference for any channel or shopping phases in general. The results also reveal that psychographic covariates, such as shopping enjoyment, loyalty, and innovativeness, can help predict segment membership. For example, multichannel enthusiasts tend to be more innovative and consider shopping a pleasurable experience, whereas store-focused consumers generally are more loyal than are multichannel enthusiasts. As for uninvolved shoppers, they do not gain hedonic utility from shopping, as confirmed by their channel orientations. Our category-specific analysis suggests that multichannel consumer segments differ across product categories, such that the enthusiasts are relatively few in the clothing category but account for a majority of consumers in the electronics category. The covariates of multichannel orientation also may differ between categories. Finally, no research shopping segment emerges in the overall segmentation, though my coauthors and I observe the research shopping phenomenon in two product categories (mortgage and holidays). Further research could help extend our understanding of this interesting phenomenon.

The study summarized in Chapter 3 considers customer reactions to a forced channel migration and employs three experimental settings. The results reveal that forcing customers into another channel leads to customer reactance, and this customer reactance fully mediates the relationship between forced migration and satisfaction, which is critical because dissatisfied customers tend to defect. Furthermore, the study findings confirm the importance of customer reactance by showing that it occurs among not just users of an existing channel but also users of a new channel. An incentive-based (reinforced) channel migration strategy might alleviate these negative consequences of forced migration though. For example, monetary rewards largely solve the channel migration problem, whereas punishments lead to reactance scores as high as those provoked by forced migration. Chapter 3 also addresses the bidirectional effect of monetary incentives; that is, they are associated with less reactance when they are used as rewards, but nonmonetary punishments provoke less reactance than do monetary ones. Finally, high and low value customers do not indicate any strong differences in their responses to a forced channel migration strategy, which seems to contradict prior literature pertaining to fairness theory (Tyler and Lind, 1992; Bolton and Lemon, 1999), distributional justice (Dowd, 1975), and customer relationship management (Verhoef, Franses and Hoekstra, 2002; Shankar, Smith, and Rangaswamy 2004). High and low value customers and their varying responses to different multichannel firm strategies remain issues that require further attention from researchers.

Finally, Chapter 4 presents results pertaining to the effect of channel elimination on customer behavior. Print catalogs remain useful tools to drive customers to purchase from online and offline channels; their absence leads to a decrease in purchase probability. Notably, this effect occurs not only for the telephone channel but also for the online channel. The results also reveal various factors that influence customer responses to catalog elimination. First, customer relational intensity and customer loyalty are associated with higher purchase

levels in the channel elimination condition for telephone and online purchase channels. Second, significant cross-channel effects influence purchase incidence after a channel elimination, such that multichannel customers are less likely to be affected by the negative consequences of channel elimination. Third, e-mail communications have a positive effect on purchase incidence. Fourth, the time trend has a positive effect on purchase incidence when the catalog channel is eliminated. That is, customers who do not receive print catalogs eventually learn to initiate the shopping process and direct themselves to the online channel for their information searches. However, this process involves a long-term adaptation, and it could take a while for customers to adapt fully to a shopping process that begins without print catalogs. Notably, these results indicate no significant effect of catalog elimination on the average order size (in €) per month. In other words, the average order size does not change—as long as customer decides to initiate the shopping process. The reminder and purchase driver functions of catalogs thus persist, but their function as full-content information sources and a search channel is questionable.

5.3 Managerial Implications

The results of these three different essays have important implications for managers in their efforts to develop multichannel customer management strategies. Specifically, the key practical insights derived from these studies could assist managers in three areas: (1) implementing and pursuing a segmentation strategy in multichannel operations, (2) effectively conducting and managing a firm-driven channel migration strategy that steers customers to preferred channels, and (3) managing channel reduction strategies, including the elimination of certain channels from customers' reach. I discuss the managerial and practical implications of each study next.

The identification in Chapter 2 of a large segment of consumers who are enthusiastic about using multiple channels should encourage managers to maintain well-coordinated channels that provide similar prices and products; otherwise, multichannel enthusiasts will become frustrated with the retailer. The multichannel enthusiasts segment also provide an argument against single-channel strategies. These different segments suggest the need for specific strategies; marketers should create retail formats that provide multichannel enthusiasts in particular with an enjoyable shopping experience in which they can innovate. New marketing media and social networks (e.g., Twitter, Facebook) may be helpful for developing and coordinating such attractive multichannel strategies. Uninvolved shoppers instead want more efficient and less frenetic channel formats, which will enhance their attitudes toward shopping in general. Firms that pursue the store-focused segment should improve the store experience by enhancing in-store shopping enjoyment. Finally, marketers must recognize the importance of category characteristics in their multichannel segmentation; managers from different sectors should conduct ad hoc research and manage their consumer base accordingly.

The finding in Chapter 3 implies that managers also should consider the negative attitudinal consequences of a forced channel migration strategy, even among customers already using the new channel. Monetary rewards might offer a more effective strategy to encourage customer channel migration. Managers can steer their customers to preferred channels by offering rewards to those who use the new channels rather than simply blocking customers from conventional channels. In contrast, punishments designed to steer customers to new channels may have serious and negative consequences; carrots are more effective than sticks. Although forcing high value customers into a new channel can destroy their value, this study has shown that they do not exhibit more severe reactions than do low value customers. In conclusion, firms should take great care when implementing a forced strategy.

According to the Chapter 4 results, marketers need to realize that eliminating their catalog channel is not yet an option. Because customers still prefer catalogs, which in turn drive customers to enter various purchase channels, they must remain as an integral part of the remote shopping industry. However, if they do pursue a channel elimination, managers need to attempt different strategies in relation to their various customer segments, especially those based on transactional histories. Behavioral segmentation, based on customers' purchasing patterns for various strategies and occasions, would be helpful in this sense. To help offset the negative effects of a channel elimination, managers need to maintain communication with their customer base through e-mails. Finally, the results imply that firms should follow a pattern of increased communication during the initial phases of the channel elimination and slowly substitute this strategy with a lower level of communication. The time trend effect shows that the negative effect of channel elimination vanishes over time, and customers will begin to initiate their shopping process through online information channels.

5.4 Limitations and Further Research Directions

The scope of this dissertation entails several limitations that also offer perspectives and directions for further research. I summarize these limitations and research opportunities for Chapters 2–4 in this section.

The investigations in Chapters 2 and 3 lack actual or longitudinal data, which may limit the generalizability of the findings. However, the features of these studies—including the lower usage rates for some channels in certain shopping phases (Chapter 2) and the need for experimentation to attain comparable situations and measure customer responses to different migration strategies (Chapter 3)—make it difficult to obtain actual data. The increasing use of new channels by customers and companies' increasing experimentation with

channel migration may support additional research that features actual data about multichannel segmentation and forced channel migration. Similarly, this thesis ignores relatively new channels, such as Web logs, virtual communities, and mobile commerce in general. The adoption levels for these new channels remain too low to address the focal topics of this thesis, but new marketing media and channels offer a fruitful topic for further research.

Category- or industry-specific differences might demand further investigation of the issues covered herein. For example, in Chapter 2, the covariates of the segments in the cross-category analysis are not consistent. Chapter 3 provides empirical evidence about the consequences of forced channel migration but only in one setting. The study in Chapter 4 is limited to the elimination of the print catalog channel, though business practice features various forms of channel elimination. Customers may respond differently to these various forms, especially across different product and service categories. Accordingly, research should extend the findings pertaining to multichannel segmentation, forced channel migration, and channel elimination with data from other industries, markets, channels, and product categories.

New advances and opportunities for the analysis of clickstream data also offer great promise for ongoing research. For example, extensive clickstream data could allow researchers to understand how channel elimination influences the patterns of clicks in Chapter 4. Similarly, clickstream data could clarify customer responses to forced channel migration in terms of compliance, channel switching, and churn and thereby extend the findings about the attitudinal responses of customers to migration strategies in Chapter 3.

5.4.1 Additional Avenues for Future Research

Moreover, general issues in multichannel customer management require additional research attention that extends beyond the scope of this thesis (though the findings in Chapters 2–4 also suggest their importance). Therefore, I conclude with some additional avenues for research in multichannel customer management.

In particular, research needs a greater focus on segmentation in multichannel customer management (Neslin and Shankar, 2008). Chapter 2 shows that multichannel shopper segments exist, and my study identifies them according to the customers' orientations toward the use of multiple channels. In Chapters 3 and 4, I observe that customer responses to firms' multichannel strategies vary according to several demographic, attitudinal, and behavioral variables. These results confirm the importance of thorough and detailed segmentation schemes for multichannel customer management. The segmentation of customers in multichannel environments offers an interesting and fruitful research avenue.

Channel use and channel preferences in multichannel environments influence customer behavior. Specifically, Chapter 2 reveals that customers' orientation toward various channels influences segment membership, Chapter 3 shows that current channel usage has a strong effect on customer responses to forced channel migration, and Chapter 4 indicates that customer channel use affects customer responses to the elimination of a print catalog channel. Researchers accordingly should focus more on customer channel usage and channel preferences, as well as their effects on customer responses to various marketing strategies, in ongoing research.

Certain multichannel activities, such as forced channel migration and channel elimination, have negative consequences on customers' attitudes and behavior. This finding reflects the importance of a key multichannel issue addressed by Neslin and Shankar (2008 "should the customers be right channeled," or in other words, "should the customers be encouraged or forced to use an optimal channel?" Marketers need greater understanding of

several such issues, including right channeling activities with respect to the effect of incentives, customer and channel characteristics, and customer attitudes.

Another research avenue that moves beyond the scope of this thesis involves the financial consequences of multichannel marketing, whether related to costs, profitability, or the revenue consequences of multichannel firm strategies. Very little research has investigated this issue (Gensler, Leeflang, Skiera and Boehm, 2010) or the potential effect of new channel introductions or eliminations on customer equity or shareholder value. A few studies provide some empirical evidence about the influence of multiple channels on brand equity (Pauwels and Dans, 2001), but additional research should focus on this crucial question to uncover the financial consequences of multichannel strategies from a firm perspective.

Finally, new marketing media (e.g., eBay, podcasts), social networks (e.g., Facebook, Twitter), comparison shopping engines (e.g., Shopzilla, Price Grabber), and social computing sites (e.g., MySpace, Tripadvisor) create new challenges for researchers and multichannel marketers. The trend of consumers and firms using new marketing media and related referrals is growing (Mashable, 2009), and though some practice-based research focuses on this domain (Forrester Research, 2006), we still know very little about these channels. Moreover, the increasing availability of Web analytics such as Omniture, Webtrends, and Google Analytics provides researchers with new opportunities to analyze and assess customers' use of these channels in the current multichannel scene. Further research should consider and focus on the new and growing numbers of channels to gain a thorough understanding of multichannel customer behavior.

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Samenvatting

Inleiding

Multikanaal klantmanagement is een belangrijk vraagstuk bij veel bedrijven. Bedrijven zetten verschillende kanalen in om informatie te verschaffen aan klanten, transacties te realiseren met klanten, service richting klanten te verlenen en interactief te communiceren met klanten. Het belangrijkste doel van dit proefschrift is om multikanaal klantgedrag en managementstrategieën beter te begrijpen. Dit proefschrift bestaat uit drie onafhankelijke onderdelen die betrekking hebben op het multikanaalgedrag van klanten en verschillende aspecten van multikanaal klantmanagement. In Hoofdstuk 2 wordt een multikanaal consumentensegmentatie onderzocht en wordt specifiek gekeken naar determinanten van de gevonden segmenten. In Hoofdstuk 3 worden de consequenties van gedwongen kanaalmigratie onderzocht. Hierbij wordt *reactance*, klanttevredenheid en intenties met betrekking tot toekomstig kanaalgebruik bestudeerd. Hoofdstuk 4 beschrijft onderzoek naar het effect van kanaaleliminatie op het aankoopgedrag van klanten van een internetwinkel. .

Hoofdstuk 2: Resultaten

Het onderzoek in Hoofdstuk 2 identificeert drie consumentensegmenten: segment 1 bevat zogenaamde "*multikanaal-enthousiastelingen*": consumenten die een positieve houding hebben tegenover het gebruik van meerdere kanalen. Het *winkelgerichte segment* (segment 3) oriënteert zich in winkels in plaats van gebruik te maken van meerdere kanalen. Uiteindelijk kenmerkt het *niet-betrokken consumentensegment* (segment 2) zich door minder belangstelling voor winkels of andere kanalen in het algemeen. De resultaten tonen aan dat

ook psychografische variabelen, zoals het plezier van winkelen, loyaliteit en innovativiteit kunnen helpen om consumentensegmenten in kaart te brengen. Zo zijn multikanaal-enthousiastelingen over het algemeen innovatiever en zien zij winkelen als een aangename ervaring. De winkelgerichte consumenten zijn loyaler aan kanalen en producten dan multikanaal-enthousiastelingen. Uit onze resultaten blijkt dat het niet-betrokken consumentensegment weinig winkelplezier heeft. Onze categoriespecifieke analyse laat zien dat de gevonden consumentensegmenten verschillen tussen verschillende productcategorieën. Zo zijn er relatief weinig multikanaal-enthousiastelingen in de kledingcategorie. Echter dit segment is het veruit het grootst in de elektronicacategorie. Onze resultaten onthullen geen research-shopper segment in de algemene segmentatiestudie, terwijl we het research-shopping segment wel in de productcategorieën hypotheken en vakanties vinden. Vervolgonderzoek zou begrip van dit interessante fenomeen kunnen vergroten.

Hoofdstuk 3: Resultaten

In Hoofdstuk 3 beschrijven wij het onderzoek naar de gevolgen van gedwongen kanaalmigratie. We rapporteren drie experimentele studies. Hierbij is specifiek gekeken naar het effect van de gedwongen kanaalmigratie op *reactance* en tevredenheid. *Reactance* is een negatieve emotionele reactie van klanten op de beperking van de vrijheid van klanten. De resultaten tonen aan dat gedwongen kanaalmigratie de *reactance* verhoogt en tevens dat het effect van kanaalmigratie op klanttevredenheid gemedieerd wordt door *reactance*. Deze mediatie houdt in dat het negatieve effect van gedwongen kanaalmigratie op tevredenheid loopt via *reactance*. Specifiek verhoogt de gedwongen kanaalmigratie *reactance*, dat vervolgens weer een negatieve invloed heeft op tevredenheid. Deze bevinding is voor bedrijven van cruciaal belang aangezien klantontevredenheid vaak tot minder klantbehoud leidt. We vinden bovendien dat gedwongen kanaalmigratie *reactance* verhoogt, zelfs wanneer

consumenten het “nieuwe” kanaal (bijvoorbeeld internet) al gebruiken. Uit onze resultaten van Experiment 2 blijkt dat een beloningsstrategie de negatieve gevolgen van gedwongen migratie kan verminderen. Dat wil zeggen: het belonen van klanten om een bepaald kanaal te gebruiken verlaagt *reactance* en verhoogt klanttevredenheid. De nadelen die worden veroorzaakt door gedwongen kanaalmigratie (kanaaleliminatie) kunnen grotendeels worden opgelost door geldelijke beloningen, terwijl straffen daarentegen leiden tot meer *reactance*. Onze resultaten suggereren dat de invloed van een geldelijke stimulans op *reactance* en klanttevredenheid zowel positief als negatief kan zijn. Dat wil zeggen dat een geldelijke stimulans minder *reactance* veroorzaakt wanneer die wordt gebruikt als een beloning, terwijl niet-geldelijke straffen leiden tot minder *reactance* dan de geldelijke-straffen. Uit onze resultaten van Experiment 3 blijkt dat er geen sterke verschillen zijn tussen klanten met een lage klantwaarde en klanten met een hoge klantwaarde in termen van *reactance* en klanttevredenheid. Dit lijkt bestaande literatuur over eerlijkheid (Tyler and Lind, 1992; Bolton and Lemon, 1999), distributionele rechtvaardigheid (Dowd, 1975) en customer relationship management (Shankar, Smith, en Rangaswamy 2004) tegen te spreken. De relatie tussen klantwaarde en verschillende multikanaalstrategieën blijft nog steeds een belangrijk onderzoeksgebied dat ook in de toekomst aandacht van onderzoekers vereist.

Hoofdstuk 4: Resultaten

In Hoofdstuk 4 worden de resultaten gepresenteerd van onderzoek naar het effect van de eliminatie van de catalogus op het aankoopgedrag bij een Internetwinkel. Hierbij kijken we specifiek naar de aankoopkans en de gemiddelde ordergrootte. De postordercatalogus kan volgende de literatuur nog steeds een nuttig marketinginstrument voor thuiswinkelen zijn, omdat het consumenten motiveert om via verschillende kanalen een aankoop te doen.. Uit ondezoek blijkt dat de eliminatie van de catalogus ertoe leidt dat de kans kleiner wordt dat

consumenten een aankoop doen. Dit gebeurt niet alleen voor het telefoonkanaal maar ook voor het internetkanaal. De eliminatie heeft echter geen invloed op de gemiddelde ordergrootte. De resultaten tonen tevens aan dat verschillende factoren invloed hebben op de consumentenrespons bij de eliminatie van de catalogus als kanaal. Ten eerste blijkt uit onze resultaten dat het negatieve effect van de eliminatie van het postorderkanaal kleiner is bij loyale klanten. Ten tweede hebben significante crosskanaal effecten invloed op de aankoopkans na kanaaleliminatie. Het blijkt uit onze resultaten dat multikanaalconsumenten minder worden beïnvloed door de negatieve gevolgen van het elimineren van het (catalogus) kanaal. Ten derde kan e-mail communicatie het negatieve effect van de eliminatie van de catalogus verminderen. Ten vierde blijkt dat het negatieve effect van eliminatie van de catalogus vermindert over de tijd. Dit suggereert dat: de klanten die de gedrukte catalogus niet ontvangen leren in de loop van de tijd om zelf aan de slag te gaan met (thuis)winkelen en de catalogus niet meer nodig hebben om online hun bestelling te plaatsen.

Implicaties voor Managers

De resultaten van deze drie hoofdstukken hebben belangrijke implicaties voor managers tijdens hun inspanningen om nieuwe en effectieve multikanaal strategieën te ontwikkelen. Praktische inzichten die zijn verkregen uit dit onderzoek kunnen managers helpen op drie gebieden: (1) de uitvoering van een marktsegmentatiestrategie voor hun multikanaalactiviteiten, (2) het daadwerkelijk uitvoeren en beheren van een kanaalmigratiestrategie en (3) de daadwerkelijke eliminatie van kanalen.

In Hoofdstuk 2 blijkt uit onze resultaten dat een groot segment van de consumenten enthousiast is over het gebruik van meerdere kanalen om te zoeken en te kopen. Dit moet managers stimuleren om goedgecoördineerde kanalen te handhaven die mogen worden voorzien van vergelijkbare prijzen en producten. Anders zouden multikanaal-

enthousiastelingen ontevreden kunnen worden over het bedrijf. Bovendien pleit het bestaan van een multikanaal-enthousiastelingensegment tegen enkel-kanaal strategieën. Het bestaan van verschillende segmenten met uiteenlopende multikanaaloriëntaties suggereert de noodzaak van specifieke strategieën. Marketeers moeten nieuwe formaten toepassen op het winkelen, waardoor zij de multikanaal-enthousiastelingen voorzien van een prettige winkelervaring. Nieuwe marketingmedia en sociale netwerken (bijvoorbeeld: Twitter, Facebook) kunnen wellicht nuttig zijn voor de ontwikkeling en coördinatie van deze aantrekkelijke multikanaalstrategieën. Consumenten in het niet-betrokken segment willen in plaats daarvan efficiënter en minder hectische kanaalformaten. Die zouden hun houding tegenover winkelen in het algemeen kunnen verbeteren. Bedrijven die zich richten op het winkelgerichte segment moeten de winkelervaring verbeteren door verbetering van het 'in-store shopping' plezier. Ten slotte moeten marketeers het belang van de productcategorieën erkennen in multikanaal consumentensegmentatie. Daarom moeten managers uit verschillende industrieën onderzoek uitvoeren met aandacht voor de verschillen tussen categorieën om hun kanalen effectiever te beheren.

Onze bevindingen in Hoofdstuk 3 suggereren dat managers ook de negatieve gevolgen van een gedwongen kanaalmigratie strategie -ten opzichte van de consumentenhouding- in aanmerking moeten nemen, zelfs in de situatie waarin klanten al gebruik maken van het nieuwe kanaal. Geldelijke beloningen kunnen een effectieve strategie vormen om de klant aan te moedigen om van kanaal te veranderen. Managers kunnen hun consumenten via gewenste kanalen attenderen op het aanbieden van beloningen aan degenen die gebruik maken van de nieuwe kanalen, zonder meteen over te gaan tot afschaffing van conventionele kanalen. Integendeel, straffen die bedoeld zijn om klanten op nieuwe kanalen te richten, kunnen ernstige negatieve gevolgen hebben. Onze resultaten wijzen er dus op dat belonen effectiever is dan straffen om consumenten te migreren naar nieuwe kanalen.

Volgens de resultaten van Hoofdstuk 4 moeten marketeers beseffen dat de eliminatie van het (gedrukte) cataloguskanaal nog geen interessante optie is. Uit onze resultaten blijkt dat groepen consumenten nog steeds een catalogus nodig hebben om aangezet te worden tot het doen van een aankoop. Bedrijven moeten dan ook voorzichtig zijn met het lichtzinnig elimineren van een kanaal. Ons onderzoek biedt een aantal aanknopingspunten. Bedrijven zouden een segment-specifieke strategie kunnen hanteren. Bij loyale klanten en bij klanten die al verschillende kanalen gebruiken kan het minder kwaad om in dit geval de catalogus te elimineren. Daarnaast kan men e-mail communicatie gebruiken als een alternatieve methode om klanten naar een bestelkanaal te leiden om ze daar vervolgens een aankoop te laten doen. Bedrijven moeten zich daarnaast realiseren, dat ons onderzoek suggereert dat klanten na verloop van tijd wennen aan het niet langer ontvangen van de catalogus. Een lange termijn focus is dus verstandig bij de keuzes rondom de afschaffing van een kanaal.